Historic, Archive Document

Do not assume content reflects current
scientific knowledge, policies, or practices.

SHOUT
SHARE
IT

ST
CE

E
IN

AD-33 Bookplate
(1-68)

NATIONAL
AGRICULTURAL
LIBRARY

UNITED STATES DEPARTMENT OF AGRICULTURE
1862 1889

1.9
F76W
v.14

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture.
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIV No. 1 WASHINGTON, D. C. JANUARY 6, 1930

A STANDARD IN PLANT NOMENCLATURE

By Daytonius, Washington

In the Service Bulletin for August 26, 1929, Mr. I. T. Haig of the Northern Rocky Mountain Forest Experiment Station, under the heading "On the standardization of plant names," gave voice to the easily understood and sympathized with bewilderment and exasperation of the typical worker with plants (other than the specialist in systematic botany) over the fact that botanical nomenclature, as exemplified in the manuals, in herbaria, and usage elsewhere, is in such sad disagreement. I doubt if there is anyone in the Service who has suffered more than the writer from the evils resultant from lack of nomenclatorial standardization of native Western plants. I took the liberty of writing Mr. Haig a personal word by way of reply. Some Forest officers who have seen my reply to Mr. Haig have urged me to have the substance of it put in the Bulletin, so here goes:

As to the desirability and need of greater standardization of botanical nomenclature there cannot well be question. Every botanical code that has been adopted is based on this premise. The difficulties in the way are enormous and cannot be thoroughly appreciated unless one has seriously tried to standardize nomenclature himself and studied into all the ramifications of the subject. However, there is reason to believe that substantial progress is being made. There will, of course, never be one hundred per cent uniformity in biological nomenclature because there is no czar in science and all men do not think alike.

In the writer's humble opinion the chief obstacle to uniformity in Western plant nomenclature is the fact that, with relatively few exceptions, the people who have prepared the botanical manuals that are in use for the West have taken little or no interest in the subject of nomenclature. One very prominent botanist said to me once, "What difference does it make what we call this plant; your cows will eat it or refuse it just the same, will they not?" It is this indifference on the part of systematic botanists generally toward the subject of nomenclature that has made so many difficulties for our field men who are not specializing in systematic botany. If the writer may say so without seeming to be boasting, it is his belief that the office of range research here in the Forest Service has perhaps done more than any other one organization that he knows of to impress upon individual botanists the importance of this matter, to try to harmonize the nomenclature of the different manuals, and to get our own botanists in the Bureau of Plant Industry to see the practical importance of the matter. Nomenclature is an exceedingly dry business, it takes an enormous amount of research to get anywhere with it, and, human nature being what it is, it is really not surprising that our nomenclature is so chaotic.

It seemed to the writer (though perhaps he is mistaken) that Mr. Haig's article failed to recognize the fact that the Forest Service is a bureau of the Department of Agriculture, that the Department of Agriculture has a standard of plant nomenclature, and that, in loyalty to our own organization, if for no other reason, we should in the Forest Service follow the nomenclature of our Departmental constituted authority. Under Dr. Frederick V. Coville, the distinguished Botanist of the Division of Botany of the Bureau of Plant Industry, we have centralized the botanical nomenclature of our Department. It is a great matter for regret that Mr. Sudworth passed away before all the points at issue between our Forest Service Check List and the Bureau of Plant Industry were ironed out. The writer has called attention to two of the most outstanding of these discrepancies in issues of the Monthly Report of the Branch of Research. If the plants to which Mr. Haig alludes in his article had been referred here to Washington to our office of range research he would have received the Bureau of Plant Industry names for these plants and there would not be the confusion which seems to exist. For instance, the Department of Agriculture recognizes the American Code of nomenclature which recognizes priority. *Lepargyrea* has priority over *Shepherdia*. Hence *Lepargyrea* is the American Code name and should, in the writer's opinion, be officially adopted as the Department of Agriculture name. There is no valid excuse for using the generic name *Shepherdia* in the Forest Service, as the writer sees the matter.

It is generally admitted that there is no superior in this country in the matter of erudite knowledge of the family *Compositae* than Dr. S. F. Blake of the Bureau of Plant Industry, who is a conservative in nomenclature, and conservatism in plant nomenclature is something we badly need. Dr. Blake insists that the Old Word thistle genus, *Carduus*, does not occur in this country except as introduced weeds and that American native thistles belong to the genus *Cirsium*. Canada thistle, therefore, should be referred to the genus *Cirsium*. The best present-day manuals are using *Cirsium* rather than *Carduus* for our native thistles. Mr. Haig's use of "*Onopordon acantium*" as a synonym of *Cirsium arvense* must be a slip of the pen. *Onopordon acanthium* is the Scotch thistle and bears about the same relationship to Canada thistle as Douglas fir does to lodgepole pine; it is not at all a synonym of *Cirsium arvense* (L.) Scop. (=*Carduus arvensis* (L.) Robs.).

With regard to *Opulaster* vs. *Physocarpus*: Under the American Code (the standard of our Department, rightly or wrongly)*Physocarpus* hasn't a sound leg to stand on. *Physocarpus* was published by Maximowicz in 1879 and is generally admitted to be the same thing as Medicus' *Opulaster* published in 1799 and hence 80 years older. One cannot upset a properly published and non-homonymous name, under the American Code at least, for one 80 years younger, and it seems unlikely that the name *Physocarpus* was gotten from official channels in our Department. Now neither botanical code recognizes specific names which never were published but only appear as synonyms. That is the trouble with *Physocarpus pauciflorus*: the "author" of it has left no description of it, and the name can have no more standing in Court, when the floodlight of truth is turned on it, than that list of 25,000 "phony" voters that the election commissioners of Pittsburgh recently threw in the Allegheny River. There's nothing to such names; that's all! That is why old Dr. Greene's later name, *Opulaster malvaceus*, is valid and is the proper one to use.

It is most earnestly recommended that our Stations and other field organizations accept the American Code and Department usage (as represented in Dr. Coville's office, Bureau of Plant Industry) as standard in plant nomenclature. This nomenclature is represented in Tidestrom's Flora of Utah and Nevada and, to a large extent, in Abrams' Illustrated Flora of the Pacific States, which should be consulted freely. It is respectfully urged that the nomenclature of other manuals which are used should, so far as possible, be edited to conform to those works. Rydberg's Flora of the Rocky Mountains, except for its extremely narrow generic and specific concepts, also pays far more attention to correct nomenclature than the average manual, and is, subject to the limitations indicated, tolerably well in accord with Departmental usage.

WHAT PRICE BIG TREES

By C. L. Hill, Calif. For. Exp. Sta.

In the Service Bulletin of September 23 appeared, on page 8, a reference credited to the June, 1928, issue of the Bulletin de la Société Forestiére Franche-Comté, to "the largest known Kauri pine tree," for which there were given the following measurements: diameter 23.6 feet; length to first limb 108 ft.; contents 282,400 cu. ft. of wood. This item appeared under the heading "Believe It Or Not." The present writer did not.

This item appears to have been perpetuated by repetition, all along the line, without observing the fact that the cubic contents given would require, for the stated diameter, a cylinder of solid wood 645 ft. high. The Kauri pine never grows more than 150 ft. high and usually the bole does not continue as such above, or much above, the first limbs, but breaks at that point into a circle of large limbs which quite dissipates it. On the assumption of the maximum bole length of 150 ft., this would leave some five times the possible bole contents to be absorbed by limb wood. Somebody had a beautiful pipe dream. Taking into account a greater or less shortage of the bole contents from that of a cylinder, the fact that the diameter given is, in all probability, outside bark and that the cubic contents is stated to be of the wood only, the probability is that the decimal point in the cubic contents got misplaced one point too far to the right. It would perhaps be possible to suppose that the figure given represents board feet contents, instead of cubic, with extraordinarily efficient sawing, except that it is hard to feature a French periodical giving results in such a unit for the enlightenment of Continental readers.

Since this case has come up, it may be worth while to review briefly the whole matter of biggest trees, which bobs up so perennially. The writer expected the above item to be challenged by Harry Tiemann of the Forest Products Laboratory, who has been interested in the matter of big trees for many years, and who took pains to run down some of the myths about Australian big trees when he was detailed over there some years ago. Since Harry seems to be too modest or too busy to join the present issue, the writer will set down some of the facts given him by Tiemann, together with some other items about California big trees, as a confirmed Californian should.

Tiemann says that the claims for heights of 400 to 500 ft., which are frequently made for Australian eucalypts, date back to uncritical estimates by Baron von Muller, about the middle of the last century. At the Melbourne Exposition in 1888, prizes were offered for authentic information about the biggest trees to be found on that continent, and the tallest authentically recorded tree which came out of that effort was 325 ft. One measuring 347 ft. has, however, been discovered since that date. Both of these trees were the so-called mountain ash of that country (Eucalyptus regnans). The eucalyptus is always, however, a slender tree and the largest of these trees would not exceed 12 ft. in diameter. The tree of largest diameter of that part of the world is the Kauri pine (Agathis australis), which is said to reach a diameter of nearly 25 ft., but this tree is a relatively short one, never exceeding a height of 150 ft. There is a record of a tree of that species which scaled 200 M.ft.B.M. of lumber. Whether this is the tree referred to by the September 23 Service Bulletin note, I do not know. This, at any rate, stood for some time as the world's tree of largest volume.

Within the past three years, however, there has been discovered in the holdings of the Little River Redwood Company, Crannell, Humboldt County, California, a redwood tree (Sequoia sempervirens) with the following dimensions: diameter, 5 ft. above ground, outside bark 20 ft. 0 ins., inside bark 18 ft. 2 ins.; lumber scale, 14 logs, 361,366 M.ft.B.M. The top diameter, inside bark, of the top log was 12 ft. 6 ins. This scale was based on the Spaulding rule, with allowance for loss in felling and 22 ins. for bark. Converted to cubic feet, this 224 ft. length of merchantable logs would give 43,120 cu. ft. of wood, exclusive of a 6 ft. stump which, together with the 78 ft. top, would give approximately 6,770 cu. ft. additional or a total of 50,000 cu. ft. for the entire bole. The top of this tree has apparently been broken off. This tree is now without question the tree of largest contents in a commercially lumbered species. For total volume of wood, however, no other tree in the world is even a good second to the giant Sequoia of the California Sierras, which has height and diameter both among the largest possessed by any species. But, even the largest of the giant Sequoias, with a diameter of over 25 ft. (above heavy root swell) and a height of over 300 feet, could not show a cubic volume of bole much more than a third of that credited to the Kauri pine by the article quoted in the Bulletin.

SECRETARY WILBUR ON PUBLIC LANDS

Ray Lyman Wilbur, Secretary of the Interior, writing under the title "What About Our Public Lands?" in Review of Reviews for December, says: "The plain and alarming fact is that, owing to many factors including the division between State and Federal authority, outside of the National Parks and the National Forests, the twenty years since the public-land report under Roosevelt has shown persistent deterioration of the land. This is of more significance than the reduced carrying capacity of the range. It strikes at our future, which can be based only on the inherent values of the continent we occupy. It is worth while to look at the present status of the public lands of the country. Since Continental days the Government has been passing its real property into the hands of its citizens. This process has been practically completed in the States east of the Missouri River. At present in the United States, exclusive of Alaska, there are roughly 190,000,000 acres under the general charge of the public land office without the slightest shadow of a program for its preservation as a range. Unless some definite procedure is agreed upon this will be nibbled away gradually until that remnant which remains will be practically valueless. Either the Federal Government should have the laws and the funds properly to protect and administer the mountain tops, the deserts, and the public lands in general, or the State should assume this responsibility. Since the States live close to these problems of grazing, fires, floods, erosion...and since there is in the States the opportunity for a political balance between the agriculturist of the valley and reclaimed area as opposed to the man using or abusing the watershed, there is more likelihood that real conservation and protection will result from local control and local management. The fight in California between the farmers in the valley lands and the placer miners in the hills who were covering the farms with debris was won by the farmers. The political majorities are in the valleys and settled areas. When they realize the significance of the mountains, the public domain, and water in general, the best results are apt to follow. It does not seem wise to me to have Federal supervision over too much of an area of any State...."

SALE OF GAME ON THE WICHITA

By John H. Hatton, D. 2

On November 26, Mr. C. N. Baldwin, Director of the Zoo of the Wm. Randolph Hearst Zoological Garden at San Simeon, California, arrived at Cache, Oklahoma, to receive twenty-four elk cows and a buffalo bull, previously negotiated for. The Supervisor during the summer had taken advantage of an opportunity to herd quite a bunch of these animals into the exhibition pasture, which is connected with the game corrals and chutes, so as to have them in readiness in case of inquiry. A check has been received for $1450, signed by Wm. Randolph Hearst on his personal account. This covers the following items:

24 cow elk @ $50	$1200
1 buffalo bull	100
1 crate	25
Hauling 25 animals in Govt. truck 12 miles to Cache, the shipping point, @ $5 per animal	125
TOTAL	1450

The buffalo was crated and the elk placed loose in one end of an express car. All were in excellent condition. Mr. Baldwin personally accompanied the shipment to California.

We learn that Mr. Hearst has a wonderful collection of animals from all parts of the world in his Zoo at San Simeon. Among them are four giraffes obtained at a cost of $33,000, and a rare species of sheep secured just south of the Mediterranean Sea. There are African lions; in fact, a very complete world collection.

The Wichita National Forest and Game Preserve takes pride in making such a substantial addition to Mr. Hearst's interesting project. Counting the elk already sold and bargained for, we will dispose of more than fifty this year. We can spare from fifty to a hundred more, besides some buffalo. Ten buffalo are being fattened and specially finished for the holiday trade. The buffalo calf crop this year numbered sixty.

Now page the Longhorns which number close to three score.

YE EDITOR DISCOVERS

Coville, of the Office of Forest Experiment Stations, is starting this winter another series of cuttings to determine the extent to which rooting may be encouraged by the use of chemicals. Space has been found in the Department's greenhouses for this work and a number of tests have been begun. It is hoped that a way can be found to make some of the valuable hardwood species which do not now propagate readily from cuttings develop roots and so do away with the necessity for starting from seed. Such propagation will make it possible to raise trees of better form and growth than is possible when seed only is used. This project is one that dovetails in with other activities at the forest experiment stations, such as those to determine the best sources of seed and the effect of heredity upon growth characteristics.

- - - - - - - -

The Agricultural Appropriation Act as reported by the Committee restores the words "and preventing" to the fire fighting item, thus making it possible (if the bill passes this way) to pay for emergency guards out of FF under such arrangements as the Bureau of the Budget may consider necessary.

- - - - - - - -

The increasing demands made by the Comptroller General for "accounting evidence" have led to serious discussion as to whether the Forest Service should not ask for an appreciable increase in its appropriations on account of the burden of such work and the additional personnel required.

- - - - - - - -

The Mexican Forestry Society (Sociedad Forestal Mexicana), in cooperation with the Forest Service of Mexico is arranging for a National Forestry Congress, to be held at Mexico City February 14-22, 1930. Owners of forest land, persons interested in the exploitation and manufacture of forest products of all kinds, foresters, farmers, stockmen, representatives of municipalities and all others interested are invited to attend. The purpose of the conference is to discuss the forestry situation in Mexico and to crystallize ideas regarding desirable forest policies, as a preliminary to the Inter-American Conference on Agriculture, Forestry, and Animal Industry which is to be held at Washington later in the year. The topics to be discussed include: National forests, State forests, National parks, Communal and Municipal forests, private forests, protection of forests and ranges against fire, protection against insects, forestry education, reforestation and correction of torrents, forest statistics, economic and fiscal problems, and forest legislation.

- - - - - - - -

At the meeting in Denver attended by training men from most of the Districts it was discovered that one District at least has a librarian who is employing admirable initiative in making the resources of the Forest Service and other libraries known to and used by the personnel of the District. The training men at Denver made certain arrangements looking to the spread of successful devices for making libraries available to our scattered personnel. These men are interested in seeing that books go out of our libraries as well as in seeing that books are added to them.

- - - - - - - -

Farmers' Bulletin No. 622, "Basket Willow Culture," is among the "best sellers" of the Forest Service. First issued in 1914, it has been reprinted almost annually, going through some 15 editions. During 1929, up to December 1, there were 11,030 copies distributed. Records show that some 130,000 copies in all have been printed.

ORDINARY WHITE DAYLIGHT IS BEST FOR GROWTH OF TREES

The ordinary white daylight, as human eyes see it, is really a composite of light rays of different colors, ranging from deep red, through orange, yellow, green, and blue to deepest violet. As light filters through the leafy canopy, some of these rays are absorbed more strongly than others, hence the light which reaches the young trees on the ground is changed in color to some extent.

How essential are these different colors of light for the best growth of plants? Do they grow better in ordinary daylight, or would they grow better in red, blue, or yellow light?

The Boyce-Thompson Institute at Yonkers, New York, has for the last three or four years studied the effects of rays of different colors upon plant growth. Dr. H. L. Shirley, formerly with that Institute and now physiologist at the Lake States Forest Experiment Station, sums up the results of these experiments as follows:

Plants are grown in houses covered with different colored glass roofs. One glass transmits the light unchanged. Another removes the ultra-violet rays. A third removes all the red. A fourth transmits red, yellow, and green; and a fifth transmits mostly all red and yellow.

The plants live in all houses and grow to maturity. Those, however, which are grown in red light are weak and spindly compared to the others. Those in the blue light look somewhat stunted, but weigh as much as any.

From these results it is concluded that white daylight is the most efficient for the growth of plants. While removing the ultra-violet and part of the blue seems to cause no bad effects, removal of all the blue is decidedly harmful. Removing all the red was much less harmful than removing all the blue.

While the manufacture of carbohydrates in plants proceeds more efficiently in red light than in blue or green, apparently blue light plays some role in the growth of plants which makes it essential for their healthy development. The best development of plants takes place in the ordinary white daylight in which all colors are present. - Lake States For. Exp. Sta. Technical Notes

FISCAL YEAR 1931 FOREST HIGHWAY FUNDS

By G. L. Lautz, Washington

On December 2 Secretary Hyde approved the apportionment of $4,500,000 Forest Highway fund as authorized by Congress for the construction of forest roads in the fiscal year 1931. The authorization as apportioned to the various states is as follows:

Alabama	$ 3,580	New Hampshire	$ 21,397
Alaska	459,384	New Mexico	201,512
Arizona	283,882	North Carolina	12,918
Arkansas	42,227	Oklahoma	1,978
California	676,451	Oregon	631,987
Colorado	327,943	Pennsylvania	8,008
Florida	13,534	Porto Rico	532
Georgia	7,849	South Carolina	1,508
Idaho	490,985	South Dakota	39,591
Illinois	390	Tennessee	11,925
Maine	1,364	Utah	165,839
Michigan	7,020	Virginia	15,085
Minnesota	29,879	Washington	331,368
Montana	396,642	West Virginia	7,015
Nebraska	4,650	Wyoming	209,361
Nevada	94,196	TOTAL	4,500,000

HINT FOR LONGEVITY

Marco Polo, 13th century commercial traveler, reported that the Grand Khan was especially favorable to tree-planting activities "from the circumstance of his diviners and astrologers having declared that those who plant trees are rewarded with long life."

JIM HUFFMAN

By F. V. Horton, Columbia

On Monday, November 18, I was shocked to hear of the death of Ranger James H. Huffman at the U. S. Veterans Hospital in Portland.

Jim, as we all called him, came to the hospital on Friday, November 15, and although his condition was pronounced serious, there was no thought that there was immediate danger.

Jim began his work on the Columbia in 1917 on improvement work, then enlisted in the 20th Engineers and spent 14 months overseas. Returning, he worked as a guard and as Ranger and was assigned to a timber sale as scaler, then he was placed in charge of the Spirit Lake District and finally promoted to the Wind River District where he has served for the past four and a half years. He was 32 years old.

Jim's record is a measure of the man. He gave of himself without stint, without other thought than that the work of the Service go on. He was friendly, considerate, and thoughtful of others.

During the Dole fire of September, 1929, he was compelled to take shelter, with his crew, in a mine tunnel and the hardship of this experience, together with the strain of this past season, undoubtedly contributed to his ill health, and it is to me, particularly fitting, that he rests in the veterans plot of Lincoln Memorial Park. He was a true soldier, serving his country to the last as faithfully and fully as those who gave their all on field of battle. He has left a priceless heritage in the example of unswerving devotion to duty, where the rewards were mainly the satisfaction of a job well done.

Jim was given a military funeral by the American Legion (of which he was a member) and was buried in his Forest Service uniform and with his badge.

Jim leaves a host of friends, not only within the Service, but among all those with whom he had contact. Their sense of irreparable loss can only deepen their sympathy for Mrs. Huffman and the two small children.

WHAT SHALL IT BE?

By Evelyn E. Kiene, D. 2.

The Forester issues manuals and handbooks; the Districts issue manuals, handbooks, and guides. Webster's International Dictionary gives the following definitions:

Manual --	A small book, such as may be carried in the hand, or conveniently handled; a handbook.
Handbook --	A book of reference to be carried in the hand; a manual; a guidebook.
Guide --	That which guides; a guidebook.

Following the lead of the National Forest Manual, in this District we have followed, or attempted to follow, the practice of referring to any publication of instructions put out for Service-wide use as a "manual" (such as Trail Manual, Equipment Manual, Telephone Manual, etc.), and any instructions issued by the District we have called a "handbook" (such as Range Management Handbook, Construction and Maintenance Handbook, etc.). Can't we get together on this, so if anyone refers to a trail handbook, for example, we'll know right off whether he means the booklet giving Service-wide instructions or some local instructions?

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson, Secretary of Agriculture.
February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIV NO. 2 WASHINGTON, D. C. JANUARY 13, 1930

FORESTRY VS FINANCES

By Leon C. Hurtt, Helena

No doubt everyone in the Service joins in a feeling of gratification that the purchase of the Waterville Tract in the White Mountains and other purchases mentioned by Mr. Kneipp's note in the December 2, issue of the Service Bulletin have proved such great buys for the Government. Fine and dandy and I hope that there are many other instances where Forest officers have done as well. But look at the other side of the picture. Part of it is painted by Howard Hopkins in the same number of the Bulletin. Unfortunately Hopkins' list of the things which should be done but aren't for lack of financial resources are far from complete. You hear every day the statement that it would be good business for the Government to build improvements faster, protect Forests from fire and insects better, plant trees faster on 2 million acres of devasted land, and insist on better stock management - all of which are essential for business-like forestry.

What is the reason for these things and the state of affairs complained of by Hopkins. I wonder if the answer is revealed in Secretary Wilbur's letter of comment about the showing on the Waterville purchase Tract. I interpret this comment as follows. - - "Tut, tut, Child. While I am glad that you can report a good showing in this case, you may be doing yourself a bad turn in the end by teaching the purse string guardians to expect similar showings in the future. Cut loose and stand upon your hind legs if you have the courage of your convictions as foresters and ask for what is actually needed even though you can't prove in every case that you can get 200 per cent dividends on every dollar you spend.

If my interpretation of Secretary Wilbur's comment is correct, I think he is dead right. For twenty-five years, since Gifford Pinchot in an unguarded moment intimated that the National Forests might sometime be self-supporting, the Forest Service has been suffering under an inferiority complex and endeavoring to live up to that prophecy. In the meantime, other less important Government financed activities which each can name for himself, have flourished with adequate appropriations. We were all greatly elated the other morning to hear that appropriation estimates had been approved for an increase of 3 million, bringing the total to 19 million. Let's hope devoutly that this increase for much needed things goes through. Even if it does however, let's not conclude that the U. S. A. is exceptionally enlightened and progressive and is up and coming in Forestry, doing things in a big way. Did you read the report in the last Journal of Forestry to the effect that more than 25 million dollars was spent by the Soviet Republics in "darkest Russia" for Forestry work in 1928 and that during 1929 they expect to spend nearly 32 million dollars on Forestry? Apparently the struggling young Soviet Republics have some Forestry enthusiasts with a punch. I wonder if the Russians attempt to show 100 per cent dividends in their 32 million expenditures?

FOREST LITTER & SUGAR BEETS

By E. N. Munns, Washington

It has always puzzled me that forest litter should be used as a fertilizer. True, the litter has a value, yet the bulk to be handled is so great in proportion to the value received that I never could understand why the litter was removed on such a large scale as to affect adversely, the growth on many acres and on many a German forest. So in Germany, I asked repeatedly where the practice of litter removal was in effect, and finally located the region and the reason .

First of all, it should be remembered that livestock in Europe is well taken care of. The cow is kept in the stable at night, is tethered out during the day, and is watched constantly and particularly. A cow must not exercise too much because the milk flow will be lessened; she must be kept warm; she must be fed just the right amount. Should she wander, feed would be trampled and feed is costly -- rather one should say that feed is not abundant and must be fully utilized. Besides wandering wastes the fertilizer. If there is clover or hay, the cow must eat it all, none can be wasted for bedding. Yes, the cow must be housed because the land is hungry for fertilizer, and mineral fertilizer is costly and money is scarce.

Years ago, there was plenty of stable bedding, but agriculture has changed in many parts of Germany. Some one discovered that sugar could be made from beets, that some soils produced beets of high sugar content, and that there was much money in raising beets for sugar. Overnight, almost, grain fields gave way to beet fields, and the amount of ruffage the cow got was decreased. Furthermore, there was no way of catching and binding the manure for there was no straw to be had, as the grass and hay were too valuable for mere bedding purposes. So the peasants turned to the forest, and the litter was used as a bedding material. As thousands of acres went into beets, the demand for litter became so acute that the forest was exploited.

Yes, the forest litter was used for fertilizer, but the books fail to tell us that the fertilizer value was incidental to the bedding value. In some parts of Germany, Poland, and Czechoslovakia, the litter is still being collected, and apparently the republics are able to do things that the monarchies could not, for litter collection is prohibited and is gradually falling into disuse. So they told me!

But, let us consider a few more facts: Sugar is being produced from cane on a larger scale than ever before, the cane has been developed until it produces more sugar than formerly, there is more sugar than the world can use, and sugar prices are falling, except when government monopolies are keeping them up There are less sugar beets being raised now than formerly, and excelsior and sawdust are supplanting litter as bedding material. Besides more grain is being produced and straw is more abundant.

Whether one answer is more correct than another is immaterial. The interesting fact is that it was the sugar beet farming that caused the early use of the forest litter, which use was permitted by the early foresters because they did not know how the forest would be affected.

EVENTS OF THE HOUR IN CONSERVATION

Land utilization and forestry came in for prominent attention in a program of relief for agriculture recommended by a special State commission in Virginia. The commission, which has just made its report to the Virginia General Assembly, was created by special act in 1928. In its suggested program designed to improve the condition of the farmers of the State, the commission includes the major recommendation that a definite forest policy be determined. Promotion of forestry as a means of decreasing acreage devoted to unprofitable crop production is also recommended. Other recommendations are:

Establishment of National, State, county, and municipal forests.

Completion of a soil survey of the State as soon as possible in order to obtain an inventory of soil resources and to determine the adaptability of lands to various crops, forestry, and livestock enterprises.

Promotion of improved forest management through adequate fire protection and intelligent culture of forest areas.

Reforestation of bare tracts.

Proper marketing of forest products.

Adequate forestry educational and service facilities.

Extension and promotion of practical forestry through the State by (1) favorable taxation of forest lands (2) public ownership of forest tracts (3) a special and continuing joint committee.

It is also recommended that the Federal Farm Board should cooperate with State and Federal agencies in making land classification and utilization surveys, recommending economic uses for State lands and removing marginal lands from crop production; also in discouraging land reclamation and in promoting reforestation.

BURNING WITH SAFETY

By Raymond Engles, Cascade

The Slate Construction Company of Albany, Oregon, contractors, completing the Black Canyon section of the new Willamette Highway on the Cascade Forest, carried on a successful burning operation and proved to be a first-rate cooperator during the past fire season.

Fifty-two hundred stations of slash on an 80-foot right-of-way were burned under the supervision of C. A. Bennett, fire warden, furnished by the Forest Service and paid by the operator. Burning was done at night when the weather was feasible and from 3 to 5 stations were burned at one time.

The following effective arrangement was used to provide for water on all parts of the fire: A 60 h. p. Ingersoll Rand air compresser and a steam pump with a 3-inch intake and a 2-inch exhaust were mounted on a 20-foot scow which could be moved along the river bank to any spot where needed. Two-inch pipe was laid from the scow to the right-of-way and two lines of hose (one and one-half inch) were laid, one on the upper side and one on the lower side of the area to be burned.

With this arrangement, using air in lieu of steam, and with the engine running at 90 pounds pressure, two nozzles, one ¾ inch and one ⅜ inch, attacked on the hose line would each throw a stream 75 feet. The engine burned on an average of 2½ gallons of gasoline per hour and weighed 3 tons while the pump weighed 300 pounds. Both engine and pump were operated by one man.

ELK COMMISSION HOLDS MEETING

A meeting of the Elk Commission was held in Washington, D. C. on December 4. Secretary of Interior Wilbur made a brief statement at the beginning of the conference, in which he expressed his interest in the elk and volunteered his help on any constructive program.

The progress made in the installation of the elk program as developed by the Commission at its first meeting was thoroughly discussed. It seemed that in view of developments since the Commission's last report the program originally contemplated should be enlarged. Recreational development has gone forward by leaps and bounds in the Jackson Hole country. Changes have been made in National Park boundaries, and the Snake River Land Company has purchased approximately 25,000 acres of land at a cost of $700,000 which they expect to turn over to the Federal Government to aid in recreational and game development plans.

After thorough discussion the Commission adopted the following resolution:

"RESOLVED, That the policy as contemplated by the Commission in its first program be broadened to include not only measures for supplementing the feeding of the elk on the winter refuges of the Biological Survey in Jackson Valley, but to include and make possible complete game administration and recreational development for the Jackson Hole territory generally through the acquisition of additional lands to be dedicated to these public purposes, but confining the scope of the policy of acquisition to the following specified areas lying outside of National Forest, National Park, and Biological Survey lands:

"1. The lands immediately adjacent to the Biological Survey refuges recommended for Federal purchase by the local Advisory Board in T. 41 N., R. 115 and 116 W., and T. 42 N., R. 115 W., as additions thereto;

"2. The lands acquired by the Snake River Land Company and those to be acquired by the Company in such localities as they may determine in agreement with the Governor of Wyoming.

"BE IT FURTHER RESOLVED, That upon an offer of donation for the purposes indicated in the foregoing resolution, from the Snake River Land Company or other owners, such offer be accepted by the Federal Government as adequate compliance with the Government policy in acquiring lands of this character."

A committee consisting of Mr. Seth E. Gordon as Chairman, Mr. Van Norden, Mr. Larom, Dr. Nelson, Mr. Roosevelt, and Mr. Ringland was appointed to draft the necessary legislation to enable the Government to proceed on its program of purchase and to present the matter to the Bureau of the Budget and Congress.

SALES BY TREE MEASUREMENT

At the Forest Management meeting of the Caribou, Targhee, and Teton Forests held at Big Springs in November, 1926, there was considerable discussion of the practicability of making most of our S-22 and small commercial sales by tree measurement.

It was the opinion of most of the Forest officers present that the method was entirely practical, and a resolution was adopted and approved favoring its use in most of the sales of this character on the Forests represented at this meeting.

Since that time the major part of the sales of sawtimber made on my district have been handled under this method, and I have found that where the work is done as carefully as is the practice when scaling in the log, the results are fully as accurate as those obtained by use of the log scale.

I have check scaled a considerable number of trees after they have been felled, and as a rule, the tree measurement checks within 10 to 20 board feet with the amount shown by log scale.

During the summer of 1927 I scaled 117 M. feet in the tree which was later scaled at the mill by the permittee as a basis of settlement with his logging contractor. His scale at the mill gave 119 M. feet. This small difference can be accounted for to a large extent by the fact that he does not scale as close as the average Forest officer would. Again during the past summer I scaled two exceptionally large Engelmann spruce in the tree; one scaled 2480 feet and the other 2290 feet in the tree. These two trees were check scaled after felling, the largest scaling 2490 feet and the other 2280 feet in the log. These two instances are given as an illustration of the result that can be expected when the trees are carefully measured for diameter and height. - C. C. S., Targhee, in D. 4 Bulletin.

I'se Regusted

By E. G. Kiene, D. 2

The Editor claims that he would like to hear from the women in the Service and I wonder if that goes for complaints too. Did you ever get so exasperated you just had to bust into print, knowing full well you were no Fanny Hurst, or Will C. Barnes, or such like? Such is my feeling at present and it's up to the Editor to provide the exhaust.

It all centers around the check made by the Washington office of the annual statistical reports - which forces a minute check in the District offices of the figures submitted by the Forests. It places us in the position of having to devote time to a detail, the importance of which seems all out of proportion to the salary spent on it. My direct contact is with the improvement tabulation. After making a painstaking check against the previous year's cumulative total and writing letters to Supervisors regarding trifling discrepancies, which must be truly irritating to the recipients, and after submitting a report on March 1, 1928, of C. Y. 1927 figures, its rather trying to be questioned on October 4, 1929, about two of the 2,141 figures included in that tabulation. One is on me - failure to make on the original a correction made on the file copy. The other asks for an explanation of why 18.6 miles (reported as 19 according to instructions) on December 31, 1926, with .7 mile (reported as 1) of new construction C. Y. 1927, gives a total of 19 miles (also rounded off according to instructions) on December 31, 1927. And then the movie directors claim something should be left to the imagination!

Just how vital is it to the Forest Service to have these minor corrections made one year and seven months after submission of the reports? If its importance can be expressed in dollars and cents, how does the figure compare with the salary expended on checking? Who in the service is not doing his derndest to make accurate reports or would cease to do so if he thought he were not going to be checked up? And if the check with the previous year's figures is so important, why not establish some check on the current year's figures? Any Forest in a District where the Form 428 record is not maintained in the District office can make serious errors in the current year's improvement figures and neither the District office nor the Washington office can detect them. I don't hesitate to pin my faith on accurate statistics coming in from our Forests - which makes it doubly distasteful to write letters asking for explanations of why there are slight discrepancies between the two years' totals.

N. B. Speaking of wasting Government time, I did not count the number of figures in the 1927 report during official hours.

YE EDITOR DISCOVERS

Between 400 and 500 leading game enthusiasts, game experts, and conservationists from all over the country attended the Sixteenth American Game Conference held in New York City on December 2 and 3.

The first day of the meeting was devoted to the subjects of game breeding, research, and surveys. Many most interesting, instructive, and technical papers were read. There were several very fine demonstrations of looking facts in the face and being unafraid of reporting failures as well as successes. Dr. Arthur A. Allen of Cornell University gave an address on breeding of ruffed grouse which outlined his failures during 12 years of intensive study. It was generally conceded by those present to be one of the most courageous statements made in regard to breeding of game birds. As he termed it, the benefits of this study are not so much from the standpoint of success, but to tell others what to avoid. Aldo Leopold presented a very interesting discussion of the progress of the game survey.

Under the general subjects which were taken up on December 3 the outstanding papers were those of Seth E. Gordon and William C. Adams on the American system of shooting, Dr. H. C. Bryant on California's educational program, Paul G. Redington on a review of wild life conservation progress, and George D. Pratt on Forest conservation essential to game conservation.

The report of the committee on Formulation of an American Wild Life Conservation Policy is one of the outstanding contributions to American game conservation. It will be published, and it is hoped that we will be able to secure copies for our field offices.

- - - - - - - -

The Secretary of Agriculture has signed a report on Senate Bills S. 62 and S. 1190. The reports on these bills explain the position of the Department and the Forest Service on proposed grazing legislation. The position as expressed in these reports is somewhat different from what it has been heretofore, since we have made the definite statement that legislation is not needed.

- - - - - - - -

In requesting 20 additional copies of Technical Bulletin No. 92, "The Economic Aspects of Forest Destruction in Northern Michigan," (by W. N. Sparhawk and W. D. Brush) G. D. Blair, Forester for the Consumers Power Company of Jackson, Michigan, has this to say:

"Permit me to say that yourself and the two men, compiling this bulletin, are to be highly congratulated for the fine piece of work.

"Your findings with regard to the forest situation in Michigan are so accurate and compiled with such natural sequence that the facts are plain to even the most ignorant and uninformed.

"I have been in touch with the forest situation in this State for a good many years and remember vividly many of the occurrences which your bulletin mentioned. I thoroughly believe that your work in this respect will be of immense benefit to this State, and wish to request that you give the largest circulation possible to this bulletin here in Michigan."

- - - - - - - -

Mrs. D. Priscilla Edgerton, who has been for the last few years with the Mississippi State Forestry Commission, returned to the Forest Service and started the new year. She will once more be connected with the Branch of Public Relations helping in the work of press information and educational cooperation. While with the Forestry Commission Mrs. Edgerton did very effective work for the State Department.

- - - - - - - - -

Paul D. Pitchlynn of the California District Office of Operation is in Washington on a two months' detail. Mr. Pitchlynn will devote his time to the review of analyses of ranger districts.

- - - - - - - - -

We didn't find the members of the various Branch offices afire (Class C type) with the New Year spirit when we went looking for news. However, we fully expect them to be going at top speed next week.

ASSOCIATE ECOLOGIST EXAMINATION, JAN. 22, 1930

The U. S. Civil Service Commission announces an examination for Associate Ecologist, Foreign Plant Introduction, U. S. Department of Agriculture, salary $3200 to $3700 per annum, the duties being: "To gather complete climatic, geographic, and soil data in relation to plant life and distribution in foreign countries as compared with similar regions in the United States. **** The studies in this country are to be supplemented by such foreign travel as may be necessary." Men are preferred. Education, training, and experience count 70 per cent, and the thesis 30 per cent. Applicants must not have reached their 45th birthday on the date of the close of receipt of applications (January 22), must have a speaking knowledge of at least one foreign language and a reading knowledge of either French or German, must have been graduated from a college or university of recognized standing with major work in botany, and in addition must have had at least three years of research experience or postgraduate study in botany whereof at least one year must have been spent in a foreign country or insular possession of the United States. The thesis must reach the Commission not later than 30 days after January 22, 1930, must consist of not less than 3000 words, and be on some phase of plant geography, including plant distribution. W. A. D.

DO AIRPLANES ACCIDENTALLY START FIRES?

By Hugh A. Ritter, Umpqua

Recently an airplane was noticed flying low over a harvested grain field of a rancher located within the protection boundaries of the South Umpqua Ranger District. While the hum of the motor of the departing plane could still be heard, a blaze was discovered in the stubble at a place over which the plane had passed.

The rancher promptly suppressed the fire, but could not determine the origin. Suspicion centers upon the plane as being the source from which the fire was started. Was the fire started by or from the plane, is a question which helps complicate the solving of the problem.

If research determines that fires can be set accidentally by or from airplanes, we may look forward to seeing, "Prevent Forest Fires" signs posted in the cockpits and cabins of the vehicles of the overhead traffic.

RANGER FRED PARRETT

By E. S. Keithley, Pike

Another "old scout" has passed on. He left us the morning of November 10. His leaving the Forest Service family with which he has been associated for twenty years brought tears of regret to all of us. Fred is gone. His work remains.

The Forest Service work on the South Platte District from the beginning has meant to all who came in contact with it, Fred Parrett. The South Platte District was his domain. Nothing could go on that Fred did not know about. He cherished the District as his own. His work never grew old; there were always new and bigger things to be done.

To one who has been intimately associated with him for the past sixteen years, few there are who have given to the Service work more gladly and willingly of their time and energy than he. Fred in his quiet manner was not easily ruffled in his dealings with timber operators, stockmen, and others in bridging the gap between Forest Service policies and selfish motives of the individual. His judgment and decisions have maintained a most satisfactory relationship between the Forest Service and the users on the South Platte District.

Along with his ability and good judgment in handling difficult administrative problems Fred knew and appreciated forest practice. Frequently I have heard him boast how through fire prevention, regulated grazing, and proper cutting practice, he had a stand of young western yellow pine and Douglas fir on his district second to none. He would tell how when he came to the Redskin Ranger Station in 1911 he could stand at the barn door and see his horses anywhere in the Station pasture, and how today, because of the young growth of pine and fir, it was necessary to tramp for an hour through the young forest to locate them.

Up on the hill in an old open burn back of the station pasture is a small plantation (some two or three acres) of western yellow pine that Fred planted about 1916. These trees now are as high as a man's head. He planted everyone of them with his own hands. To appreciate the pride he took in this plantation one had only to walk through it with him. Truly here is a monument to his faith and vision in forestry that will endure for a long time. It will be monumented to him.

To be with Fred on a field trip was a pleasure. Even in midwinter with two feet of snow, sleeping in camp beds in an old shack through the cracks and roof of which a cat could be thrown, and a temperature of 10 to 20 degrees below, his dry wit and humor made the longest night seem short. Under such trying and uncomfortable conditions one was forced to laugh at such remarks from him until his sides ached and tears clouded the eyes, even as now the tears of sorrow come as we realize he has gone from us.

These are only a few of the many marks and impressions he has left with those who knew him that time cannot destroy. In behalf of the Forest Service family, "Good-bye, Fred, old scout, till we meet again".

CLEARING THE RANGE

Eight thousand wild horses were killed in Arizona last year.

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. • • • Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson, Secretary of Agriculture.
February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIV NO. 3 WASHINGTON, D. C. JANUARY 20, 1930

JUDGING UTILIZATION OF NATIONAL FOREST RANGES

By R. R. Hill, Washington

At the end of each grazing year Rangers are called upon to report the extent to which the forage on each allotment has been overgrazed or undergrazed. These reports from the basis of important adjustments in numbers and distribution of stock and in the methods of handling stock. Their importance in range management makes it essential that the estimates of utilization be accurate. In the first place there should be an exact definition of what constitutes proper utilization for a given set of range conditions. The grazing manual does not attempt to define proper utilization in sufficient detail to serve as a guide in the management of specific types. It states merely the general rule that from 10 to 25 per cent of the palatable vegetation should be left at the end of the season. The difficulty in applying this rule in specific instances lies in the determination of what constitutes 10 to 25 per cent of the palatable vegetation. Good range management has for its aim the conservative use and perpetuation of the valuable forage plants. If a range unit has highly palatable plants growing in mixture with plants that are grazed but lightly until the best plants are taken, good management requires that grazing use stop when the choice plants are moderately grazed. It is obvious that the per cent of other vegetation left after the best plants have been taken will vary with the extent to which such plants occur in the stand and with their relative palatability. Consequently a specific definition of proper utilization must be set up for each important forage type and modified to meet the local requirements in regard to the protection of timber reproduction, soil and watersheds, and the needs of game and recreation.

After the per cent to which each important plant species should be grazed has been determined the next problem is to define an accurate and practical way of deciding when the specified utilization has been reached. At present the general method in use consists of an ocular estimate checked only by the officer's judgment. Experience has shown that not only is there apt to be a wide difference of opinion among Forest officers as to what constitutes proper utilization, but in judging actual use it is much more common for them to differ widely than to agree as closely as management needs require.

The problems connected with determining and applying utilization standards came up for consideration during a field conference on the Bighorn Forest last year attended by representatives of the local office, four District offices, and the Washington office. From this discussion there was evolved a formula by the use of which the officers present agreed upon a definite standard of proper utilization for the types experimented with and expressed in concrete terms the actual use that had been made of the forage. This formula filled in for a hypothetical type follows:

Formula for Recording Proper and Actual Forage Utilization by Types

Important Forage Species	Ave. height of plant or length of stem growth in ave. year*	Height or amount of plant left on range				% of total forage which plant represents	% of total forage left on range	
		Proper		Current Yr.			Proper	Current Year
		Inches	% of total growth of plant	Inches	% of total growth of plant		(4)×(7)	(6)×(7)
(Col. (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Aris. fescue	14"	10"	71	12"	86	40	28	34
Mt.Muhlenbergia	18"	7"	40	10"	55	30	12	16
Senecio serra	30"	–	20	–	25	5	1	1.3
Mertensia ciliata	24"	2"	8	4"	17	5	.4	.8
Cercocarpus parvifolius	10"	3"	30	2"	20	5	1.5	1
					Total	85%	43%	53%

Utilization–– % under (–) or above (+) proper ....(–10%)
Percent current forage is above (+)
or below (–) normal (+15%).

*Average yearly production is used here because that is the basis upon which all carrying capacity estimates are calculated.

It is proposed that columns 1, 2, 3, 4, 7 and 8 of the formula would be filled in by the Supervisor and a District office representative for each important type of a Forest. It could be mimeographed in this form and made available for several years' use. The Ranger would fill in columns, 5, 6, and 9 in connection with his range inspection at the close of the grazing year. A comparison of column 9 with column 8 would indicate in terms of percentage the amount of understocking or overstocking that prevailed during the current year.

It is believed there is no step involved in the use of the formula which is not taken in connection with commonly used methods of determining carrying capacity or judging range utilization. The formula merely arranges the processes in orderly fashion and provides for recording estimates in exact mathematical terms. For example, no one attempts to estimate the amount of forage available on the range without mentally listing the important species and roughly classifying them as to palatability. Under the formula these processes would be systematized and recorded in columns (1), (3), (4), (7) and (8). All comparisons of current year's forage production with normal production, such as are made each year by every Ranger, contemplate a definite mental image of the size or growth production of the average plant of each species in an average year. In the formula these images would be given concrete expression in column (2). Likewise, under present practice each Ranger must have a definite conception of the average size that the ungrazed specimens of the important species attained during the current year as well as the average amount of each species left in order to make out his annual forage utilization report. In the formula his calculations would be recorded in columns (5), (6) and (9).

Owing to the very limited number of men who participated in the discussion from which the formula emerged it would be presumptuous to consider that it is the best that may be developed. Many other Forest officers have been worrying about this same problem and it would be mighty interesting to exchange ideas regarding its best solution.

DR. LANGMUIR INTIMATES THAT WE ARE "FUZZY."

By H. T. Gisborne, Northern Rocky Mt. For. Exp. Sta.

In a recent article, "Modern Concepts in Physics and Their Relation to Chemistry," published in "Science" (October 25, 1929) Dr. Langmuir, of the Schenectady Laboratory of the General Electric Company, uses a case from forestry to illustrate certain classes of so-called meaningless questions.

He says: "A great deal of time and effort is wasted in scientific circles as well as in the world at large through failure to give sufficiently definite or useful definition of words and concepts.

"In some cases questions fail to have meaning because of the more or less inherent fuzziness of the concepts involved. For example, if we compare two trees of about the same size, it may have no meaning to ask which tree has the larger diameter, for no one has defined the diameter of a tree with the necessary precision."

Many of us might be inclined to disagree even with such an authority as Dr. Langmuir. We might agree that the expression "diameter of a tree" should have a "sufficiently definite or useful definition," but we might contend rather forcibly that this expression has just such a definite definition, to anyone at all familiar with such work.

At the same time we have some terms which the learned Doctor might have used with considerable justification. There is "Hazard" for example, and "Risk." A recent forest research "note" states that there is "No reduction of slash hazard on current logging area." Just what was not reduced, the chance of fire starting in that slash, the chance of fire spreading through it, the volume of the slash, or all three conditions? And just what is the difference and similarity of slash hazard and fire hazard? And what did that reduction do to the "risk" on that area?

Then we have "Liability," with two meanings carefully defined in our "Glossary of Terms Used in Fire Control" and "Rate of Spread" with two meanings defined. One might concoct a sentence reading: "The liability of a greater rate of spread on areas of high slash hazard but low risk will have no effect upon the forest liability in this region." And then Dr. Langmuir might have cause for complaint. One familiar with his glossary, however, would know that this sentence means: The probability of fires becoming large on areas covered with large volumes of slash, but with few fire starting agencies active, will have no effect upon the total value of the resources susceptible to destruction by fire in this region. Maybe we are a little fuzzy.

ANNUAL MEETING OF THE SOCIETY OF AMERICAN FORESTERS

By L. F. Kneipp, Washington

Perhaps one of the unique features of the twenty-ninth annual meeting of the Society of American Foresters at Des Moines, Iowa, on December 30 and 31 was the fact that all of its sessions were attended by an honest-to-goodness dirt forester of the female persuasion. Although the young lady is still a student in the Forest School at Ames, her instructors proudly proclaim that in the field work she can run a compass, or drag a chain, or wield an ax or shovel as effectively as any of her male colleagues, and shows as great an independence of spirit and activity as any. Another field hitherto regarded as the proud prerogative of the male thus is being invaded by the eternal feminine.

A considerable divergence of view as to the future needs for forests was mainifested by Dr. Compton, of the National Lumber Manufacturers Association, and Assistant Forester Clapp. Later Cap. Winslow, with the aid of charts closely resembling the wings of an airplane, discussed some trends which might easily warrant the conclusion that future needs substantially could be met by the present area of farm woodlands.

A discussion of some significant aspects of the idle land phase of the forest problem by S. Bunker, State Forester of Alabama, and Professor H. H. Chapman, pinch-hitting for Sam Dana, who could not be present, tended toward an analysis of the propriety of public action.

Less difference of viewpoint was manifested in the discussion of our public forests by Colonel Graves and Assistant Forester Kneipp, probably due to the fact that time was not available for extended participation in the discussion by the members attending.

Colonel Greeley unfortunately was unable to attend the meeting, but his excellent paper on the stabilization of lumber production was read with fine dramatic effect by President Redington and furnished the attending members with ample food for thought on one of the present acute problems of the industry.

Mr. Busick was unable to attend and present his article on some local aspects of production control. Consequently the subject was discussed by Professor Malcolm Sharp, who emphasized the "Due Process of Law" feature of the constitution on the one hand and the provisions of the Sherman-Anti-Trust Act on the other, with some analogies to similar movements by the petroleum industry and by wood industries.

Dr. Ritter's discussion of the dissection of wood fibers by chemical means, illustrated by microphotographic slides, was exceedingly interesting, as was Mr. Leopold's discussion of environmental control for game through modified silviculture, which gave those in attendance a somewhat new conception of the important relationship of forest cover to wild life propagation. Lowdermilk's findings regarding some influences of the forest in erosion and water control, read in his absence by President Redington, made a strong impression.

Finally, Representative Dickinson, Chairman of the Sub-committee on agriculture of the House appropriations committee in an interesting talk combined a picture of the general reaction of members of Congress in matters relating to forestry and the impressions he personally derived as a result of his trip last summer with Major Stuart.

Barrington Moore, as Chairman of the Special Committee, submitted to the meeting the Committee's draft of a statement on "A Forest Policy for the United States," together with a minority report prepared by Mr. Pinchot and Major Ahern, suggestions for revision of certain features submitted by W. Reed of the National Lumber Manufacturers Association and others submitted by Ward Shepard. It was not practical to supply copies of these meaty documents to the attending members until just before they came up on the program, consequently, their detailed consideration was not possible, and the meeting contented itself with approving the proposal that the committee's report, the minority report, and Reed's and Shepard's suggested amendments be submitted to the whole membership of the Society by publication in the Journal, or otherwise, for final action through the agency of letter ballots.

The meeting showed a remarkable self control in limiting the number of resolutions adopted, which aside from the customary resolutions of thanks were only four in number. However, one of these was an endorsement of Representative Knutson's Bill authorizing enlarged appropriations for forest planting east of the Rocky Mountains, while another very pointedly condemned the activities of the American Nurserymen's Association in opposition to forest tree distribution under the Clarke-McNary Act.

One interesting feature of the meeting was the faithful attendance at all sessions of many of the forestry students from Ames, who not only constituted an interested and inspiring audience during the formal sessions but also contributed much of the entertainment at the banquet.

GRANGER TO HEAD FOREST SURVEY

The Forester has announced the transfer and promotion of District Forester C. M. Granger to the position of Head Forest Economist, to have charge of the nation-wide Forest Survey which the Forest Service is authorized to conduct under Section 9 of the McSweeney-McNary Forest Research Act.

The Forest Survey is a comprehensive appraisal of existing forest supplies and conditions, growth and requirements, and of present and future trends, all of which properly coordinated will constitute a fundamental and economically sound basis for determining Federal, State, and industrial forest policies and programs.

According to the financial plan underlying the McSweeney Act, the Federal contribution to the project will be about $3,000,000. A small initial appropriation of $40,000 is available this year. Those phases of the Survey, such as the forest resource inventory and the study of growth, which can be so organized will be handled by the respective Forest Experiment Stations under the general direction of Mr. Granger. The initial region selected for intensive work is the Pacific Northwest in recognition of its outstanding complex and important forest problems. The Pacific Northwest Forest Experiment Station has already commenced preliminary work. Another step already taken is a questionnaire canvass, in cooperation with the Bureau of the Census, for 1928, of the wood requirements of the wood-using industries, which will show these requirements by classes of industry, species, form in which secured, and States. This is a part of the present and future wood requirements phase of the Survey. Advance cooperative work is also being initiated in the Lake States region.

Mr. Granger's headquarters will be in Portland temporarily.

The Forester also has announced the appointment of Mr. Horace J. Andrews as Senior Forest Economist, to become the regional project leader for the Pacific Northwest, as a member of the staff of the Pacific Northwest Forest Experiment Station, where he will assume his duties this month. Mr. Andrews took his forestry training at the University of Michigan, where he secured his master's degree in 1916. During the summers of 1914-1917 he was engaged in timber survey work on the National Forests in Districts 2, 5, and 6. Mr. Andrews has had wide and successful experience in private work and in teaching at three forest schools. He was closely associated with the development of the Michigan Land Economic Survey, and more recently has been in charge of the important Divisions of Protection and Lands in the Michigan Department of Conservation.

YE EDITOR DISCOVERS

Award of the Society of American Foresters' prize of $1,000 for the best article on the solution of the country's forestry problem has been made to Ward Shepard. Mr. Shepard's article "Cooperative Control: A Proposed Solution of the Forest Problem" will appear in the February issue of the Journal of Forestry.

- - - - - - - - -

Paul D. Kelleter, for many years a member of the Forest Service and for 4½ years Director of Extension at the New York State College at Syracuse, has been appointed Conservation Director of Wisconsin. He will take up his new duties on January 16. Mr. Kelleter's appointment will fill a position which has been vacant since the resignation of the former Director on December 31, 1927. As Conservation Director Mr. Kelleter will have supervision over all activities of the Wisconsin Conservation Commission, which comprise organized fire protection work and State Forests, State Parks, and Fish and Game matters.

- - - - - - - - -

The Washington office is making elaborate preparations to celebrate on February 1 the twenty-fifth anniversary of the establishment of the Forest Service. Present plans call for an afternoon meeting, beginning at 2 o'clock in the Auditorium of the National Museum. We expect that a number of speakers of national note will be on the program. Pictures from the family album will be shown, particularly of the old timers. At 8:30 in the evening a reception-dance will be held in Pierce Hall, 16th and Harvard Streets, N. W. There is a possibility that arrangements can be completed for broadcasting at least a few of the speeches to be made at the afternoon meeting.

- - - - - - - - -

Miss Jean Kerr, for several years Assistant Editor of the Forest Worker, has been appointed Editor beginning with the January issue. Miss Kerr has been largely responsible for the arduous task of getting out the Worker almost single-handed and for establishing for the Worker an enviable record for accuracy, interest, and comprehensiveness. Now she will be assisted by Mrs. D. Priscilla Edgerton who returned to the Service January 1, after an absence of several years, in which she was engaged in editorial work in the Department and later in educational and publicity work for the State Forestry Department of Mississippi. In addition to assisting with the Worker, Mrs. Edgerton will contribute to the editorial, publicity, and general educational work.

- - - - - - - - -

A new petrified forest, the only one so far discovered with the trees lying as they fell millions of years ago, is reported by the U. S. Bureau of Reclamation. It was found by a road-building expedition on the Lower Yellowstone reclamation project, about three miles southwest of Savage, Montana. The petrified forest covers several acres. Some of the trees are ten feet in diameter and over 100 feet long. They all lie with their tops pointing in the same direction, indicating that they may have been blown down by a storm. The shape of the trunks suggests that they belong to the same forests that supplied the materials for the nearby beds of coal.

- - - - - - - - -

Professor Thomas D. Burleigh of the Georgia Forest School has been employed by the Biological Survey as Associate Forest Biologist and is being assigned to the Appalachian Forest Experiment Station. Professor Burleigh not only has an excellent background and training in forestry but also has been for many years interested in biology. It is not his first work with the Biological Survey, as he has already been employed by that organization on studies of birds and animals in Georgia. Professor Burleigh will make his headquarters at Asheville with the experiment station and reported for duty on January 1. His first work will be to make a reconnaissance of the region before preparing a program for more intensive work.

- - - - - - - - -

James L. Averell of the Lake States Experiment Station has transferred his activities from the Lake States to the Southern Forest Experiment Station, where he will participate in the research in naval stores production largely in the southeastern section. Averell will take the place of N. T. Mirov, who recently left the Service to join a turpentine and paint organization on the Pacific Coast.

AN ORIGINAL SUPERVISOR

By Carl B. Neal, Umpqua

Raphael ("Rafe") Benton Dixon, first Supervisor of the Umpqua National Forest died recently at his home near Dixonville east Roseburg at the age of 82 years.

Mr. Dixon was appointed Supervisor in 1897 by his close friend Binger Herman. He held the office for about two years when he passed it on to his brother Enos Dixon. The latter held it until the appointment of Smith C. Bartrum. The job was appointive and political in those days. Mr. Bartrum was Supervisor from about 1904 to 1920.

"Rafe" Dixon was born in Missouri and came to Oregon by ox team with his parents in 1852 when six years old. They settled near Roseburg one year later. He was one of the leading stock men of the State and his sons, William, James, and Seth are now prominent stockmen in Douglas and Klanath Counties. They run sheep on the Umpqua as a part of their operations.

POWER SAWS FOR FELLING TREES

According to J. R. Carr, logging superintendent for Eastman, Gardiner & Company of Laurel, Miss., the days of the "flat-head" in the Southern piney-woods are numbered. During the past year the company has almost entirely replaced hand sawyers with gasoline-driven power saws for felling timber. Operated by a crew of 3 to 5 men, each saw cuts 175 to 200 trees a day, at a cost of 25 to 28 cents per M feet. It is believed that the cost can be reduced below this. One of the principal advantages of the power saw is that it leaves stumps only 3 to 4 inches high, as against 12 to 14 inches by hand-sawing . This results in a saving of some 10,000 feet of high grade timber in a day's work, and also in some reduction of skidding costs. Although the saws have not yet been used in the company's hardwood operation, they are used to cut hardwoods where mixed with the pine. There has been very little trouble with saws breaking. - W. N. S.

SOME DOPE ON ROADS

By E. N. Munns, Washington

Roads were first built by the Assyrians, Persians, and Egyptians for use in military strategy, but they did not reach a high stage of development until the Roman Empire, whose great network of roads has been famous throughout the centuries. The Roman roads in France consisted of four layers, a foundation of larger flat stones covered by broken stones and softer material and finished with large paving stones in the middle of the road and gravel on the sides. Good roads were unknown in France from the fall of the Roman Empire until the time of Louis XIV. In 1775, a French engineer, Tresaguet, revolutionized the construction of roads. The rebirth of commercial activity after the Napoleonic wars gave a new impetus to road building, and the old system was further modified by MacAdam's introduction of smoother paving and by Lemoine's invention of the steam roller.

LITTLE BOBBY'S CHRISTMAS TREE

Little Boby Hillbeck of Oakland once dreamed a beautiful dream.

Bobby was a ten-year-old and Christmas was near.

But his dream was not of Santa Clause and his prancing reindeer and bulging bag of toys.

Little Bobby dreamed of a beautiful Christmas tree, floating like a tower of flashing jewels on the quiet waters of Lake Merritt.

A tree festooned in scintillating lights, with music and Christmas cheer to make glad the hearts of children.

This Christmas Eve, Little Bobby's dream will come true.

From a great raft in the center of Lake Merritt will rise a majestic sixty-foot fir ablaze with a myriad of sparkling lights.

The bands will play, the crowds will cheer, and all the children of Oakland will pay homage to Bobby's dream tree.

Little Bobby will not be one of the happy Christmas throng.

One quiet evening last summer, as the setting sun rimmed with glory the portals of the Golden Gate, an angel came and took him home.

But Little Bobby's dream tree will live forever in the memory of ten thousand thousand children.

W. H. in D. 5 Bulletin

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson, Secretary of Agriculture.

February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIV, No. 4 WASHINGTON, D. C. JAN. 27, 1930

AN UNUSUAL SALE

By Charles Allen, Wichita

In speaking of sales- No there was no scaling involved, but there was some running. It's admitted that knowledge and skill are required to scale a sale, but to run a scale? Pardon, sale- requires an entirely different brand of skill.

For example: An 8,000 acre pasture, inclosing some of the Wichita's roughest, sprinkled with brush and scrub oak. A cover of high grass, in the best pasture area, liberally endowed with boulders, large and small, with the density of granite. Hazardous territory for breakneck speed on horseback. Then, too, the bull elk carry mature and imposing headgear at this season and if crowded too hard, may use those horns with disastrous effect. You see, they sacrifice a tremendous amount of strength and vitality to grow those horns. About 1/3 of an inch per day, from April to October, might state the rate of growth. They come out of the ordeal gaunt and spiritless. But indeed there must be compensation. It's ordained by Nature in various forms. Headgear matured, business of recuperation. They're at their best when the rutting season starts, thus grace, beauty, fine spirit, in short top qualities of wild life are passed on to the next generation.

In the aforementioned pasture there are some 350 elk, and to think of the bull elk losing those fine antlers every spring? "Gruesome detail" isn't it? But think of the added publicity.

It is hard to convince some tourists that bull elk do actually shed their horns each year and then grow another set.

The sale in this case consisted of 24 elk and 1 buffalo. Indeed skill is required to take such a bunch of wild animals from an 8,000 acre pasture and put them in the small confines of one railroad car. Thrills and hazards were not lacking in the procedure. An elk will run until he thinks it's no use and will then stop and "sull," as they call it, and go to gnashing his teeth. Not healthy to get in close when the sulling operation is going on. They strike out quite wickedly with those cloven front feet. If it happens to be a bull elk, he possibly would, under proper provocation, make disastrous use of his antlers.

Buffalo bulls don't "sull," but they do charge, like an inferno of bone and flesh. When they charge it's well to step aside. They go straight ahead and stop for nothing.

With it all, the railroad car was loaded, hooked behind a Frisco engine, and California bound.

Why does man take such an intense interest in wild life? Some would answer it very pointedly and direct with: Because wild life is interesting. Some might say: Because man is ever reaching out for something beyond his narrow circle. And that Nature fills the bill. And that wild life is a feature of Nature.

W. R. Hearst was desirous of obtaining 24 elk and 1 buffalo as an added feature to his Zoological Gardens at San Simeon, California, which Zoological Gardens already, it is said, contained a $33,000 giraffe.

Wichita took care of the Hearst order and added another credit mark to her Public Service program.

A FUNDAMENTALIST

The toughest of my sixteen Forest Service years is almost over. I say almost, because that last spark isn't out yet. Physically, and probably mentally, I am slightly overtrained and under weight, yet there are a few things I want to set down before the season of "this and that" dulls the memory or confuses the lesson.

With increasing reluctance I have watched my academic illusions fade before the east wind of experience. The end of this season finds me building anew my conception of forestry.

This season has burned away the accumulation of mossy theories and carefully nurtured half-truths and exposed the unbeautiful but solid bed-rock of actuality. In the idiom of the day, "I've quit kidding myself."

With the egotism of part knowledge, which is to say the egotism of ignorance, I had thought the public in my own region generally sold to care and prevention of fire. Now I know that generally this public is either pyromaniac or just "don't give a Darn." Our friend and neighbor in whom we had the utmost faith sets his slash on fire in spite of our pleadings because the law says October first is the open season. Our right bower, the State Fire Warden, issues burning permits with the first raindrop because he "has authority." Every son and his brother for miles and miles touches off his slash in the face of 4 months drought, 60-mile-an-hour east wind, and a minus zero humidity. The result? - A hundred thousand-acre catastrophe. A sacrifice of human lives, happy homes, and of a priceless heritage for those generations yet unborn. A sacrifice offered up to those hell's handmaidens, selfishness, carelessness, and indifference.

In the midst of it all, I wondered if I was justified in sending men out to risk their live in an effort to save the forests for such an indifferent, careless, selfish public. But it was not for these that the men risked their lives. It was for those who are to come; it was for those unborn generations that they might not curse us. The risk was gladly taken in order that some future generation of mothers might not find it more merciful to murder their babies than to have them crucified by famine because their ancestors destroyed the life-giving forests.

And so I build anew my conception of forestry. I leave it to those whom it may satisfy to ponder on the minute calculations of this and that, and for myself I will do that thing which I know is fundamental and give of my strength to the protection of the forest from fire, and of my thought to teaching this generation the urgency for an awakening to this problem of forest protection..

IS IT SALT?

The following interesting note is submitted by Ranger Bob Thompson of the Coronado:

"Just recently I was asked by a cowman on this district why a bunch of his cattle with plenty of grass, water, and salt would cross to another part of his range, and eat on a bunch of old bones, and then drift back. These cattle never picked up in flesh and were never as hardy as those just across the ridge on the other parts of the range. This man replaces his bulls every three years, in order to build up his herd. The other cattle carried weight and the frame was larger. Both bunches were on a good grama range. I placed this question before W. C. Turney of Elgin, who had done a great deal of experimenting with his herd of cattle. Turney informed me that it was a lack of mineral salts in the grass. He had had the same trouble with his cattle, and to offset this, had fed bone meal mixed with pulverized salt, commencing with fifteen pounds of bone meal to 100 pounds of salt, increasing the bone meal as the cattle got used to it. He stated the same trouble existed with alfalfa, depending upon the soil contents. After a heavy rain in one of his pastures, the feed was excellent but the stock did not pick up until they were removed, and the above mixture fed to them. He believed the rains had removed the top soil so that the grass did not obtain the salts required. He further informed me that experiments along these lines with grasses in different localities have been made by the University of California but none so far by the University of Arizona, and that on fenced ranges this would have to be watched closely as salt did not furnish the required mineral contents. Many breeds at stock shows would have on hand a certain amount of clay in order to furnish the stock this mineral. I am wondering if this is the reason cattle seek natural salt licks in preference to salt placed on the range, if so, it may mean placing on the range a certain amount of bone-meal as well as salt in order to get proper distribution." - D. 3 Bulletin

RADIO AS AN EDUCATIONAL MEDIUM

By C. E. Randall, Washington

In 1922 it was estimated that there were 60,000 radio receiving sets in use in the United States. In a short seven years the number has increased to more than nine million, and radio has come to occupy a position of extreme importance as an advertising and publicity medium.

A recent study of radio broadcasting made under the auspices of the Metropolitan Life Insurance Company placed the number of radio families in the United States at 9,640,348 and the total radio audience at approximately 41 million. The percentage of families in each population group having radio sets was estimated to be: large cities, 37 per cent; smaller cities, 41 per cent; rural towns, 32 per cent; farms, 29 per cent. Interviews with a large number of radio families brought out the fact that more than 80 per cent of the total number of radio owners were in the habit of using their sets daily. The majority tuned in between the hours of 7 and 11 P. M. The maximum audience was between the hours of 8 and 10 P. M. The noon hour, 12 to 1, and the dinner hour, 6 to 7 P. M., were nearly equal in number of listeners. The hours of 12 to 2 P. M. were somewhat more popular with farmers than other groups. Eighty four per cent of the radio families reported that the entire family usually listened in. About three fourths of the farmers indicated that they enjoyed talks on agricultural subjects.

More than 200 commercial concerns are now employing the facilities of the two major broadcasting systems and a much greater number are using one or more local stations. Practically all companies which use radio for advertising and publicity purposes maintain that the outstanding value of the medium lies in building good will. Practically none of them use radio for direct selling.

The experiences of the commercial broadcasters offer some useful guides for the Forest Service in its use of radio as an educational medium. That radio is an effective medium can hardly be questioned, and we should undoubtedly take advantage of every opportunity offered for its use. The survey mentioned above will give us indications as to preferences in hours, when a choice is possible. It seems probable that we should follow the experience of the commercial broadcasters in aiming our programs mainly at the creation of good will and at increased recognition of and interest in forestry rather than at the promotion of specific practices or ideas. Radio publicity has been found to tie in effectively with press publicity, creating a more receptive field for the "direct selling" follow-ups in the press.

Among the characteristics of a good radio program features most contributory to success have been found to be:

(1) Attention compelling power through nominal or outstanding features.

(2) Continuity through the establishment of a definite program policy which will bring in regular listeners.

(3) Avoidance of broadcasting ineptitudes which irritate and annoy listeners. One of these is lack of naturalness in announcing; another is exaggerated reference to a sponsor's generosity or the like.

(4) Creation of a radio personality who will achieve a popular following in the course of a radio campaign. District 5's "Ranger Bill" series gave us a good example of this.

A study made by Dr. Daniel Starch of New York in 1928 showed that 62 per cent of the radio families mentioned orchestral music as their favorite type of entertainment. Popular entertainers were preferred by 52 per cent, and short talks on interesting subjects by 40 per cent.

THE BOYCE THOMPSON SOUTHWESTERN ARBORETUM

An arboretum higher and drier than most is under development a few miles west of Superior, Ariz. It is a project of William Boyce Thompson, who founded the Boyce Thompson Institute for Plant Research at Yonkers, N. Y. About 2,000 acres of land at an elevation of approximately 2,600 feet has been set aside as the Boyce Thompson Southwestern Arboretum.

Plants and trees that are native to Arizona, Nevada, New Mexico, California, and Texas will be studied intensively at the arboretum and experiments will be macde in introducing species that grow in arid and semiarid conditions in foreign lands, including Australia, Africa, South America, Southern Europe, the West Indies, and Mexico. Some plants are to be maintained under natural conditions so far as rainfall is concerned, to see what results can be obtained through culture and protection from natural enemies. Others will be irrigated to determine the possibilities of greater development of plants the vigor of which has been established through centuries of growth in arid conditions.

In the five years since the arboretum was established active work has been begun on a comparatively small area. In a sheltered valley close to the State highway between Phoenix and Globe buildings have been erected for laboratory and propagation work and for institution headquarters. Water is pumped to the arboretum reservoir from a well in the Queen Creek Valley. Seeds and plants brought in from many parts of the world are started under glass in the propagation rooms and transplanted thence to lath houses, where they are carefully watched and tended in preparation for planting in the field. With trees and plants that have been graduated from the propagation house an interesting canyon garden has been developed. Here trees of possible value for shade or for fruit are interspersed with plants that are expected to prove valuable as ornamentals. Labels acquaint the visitor with the names of the species.

An important feature of the work being carried on at the arboretum is an especially elaborate study of root growth.

ONE MORE FRAUDULENT MINING CLAIM DISPOSED OF

In December 1925, one Charles Stewart secured a special-use permit to occupy a tract of little more than one acre of land in the Tonto Forest for the maintenance of a tourist supply station. His occupancy proving undesirable the permit was canceled on December 31, 1928. Mr. Stewart, therefore, proceeded to locate a claim under the mining laws, said claim being known as the "Dinty Moore." Apparently the mineral values involved existed only in Mr. Stewart's imagination, but nevertheless he resisted any attempt to evict him from the premises or to discontinue his business operations.

In due course, however, the matter was brought to the attention of the United States District Judge, who on the fourth day of November, last, issued a decree permanently enjoining Mr. Stewart, his associates, their agents, servants, employees, transferees, assigns, and all other persons from continuing after sixty days from that date to occupy the said land as a public service supply station or for any purpose. This creates the presumption that Mr. Stewart will either vacate the premises or spend a lot of time in trying to convince the Judge that he should not be penalized for contempt of court.

Unfortunately the decision in this case was not based upon the absence of mineral values but rather upon the fact that the land was under a reclamation withdrawal and, therefore, not subject to mineral entry. This fact, however, will not totally eliminate the benefits which accrue when a fraudulent mineral claim is successfully disposed of by appropriate court action. - L.F.K.

YE EDITOR DISCOVERS

The recommended January 1 promotions did not become effective on that date because some Bureaus had not submitted their recommendations and the Department did not want to consider any recommendations until they were all in. On January 15 we received notice that the Secretary had decided that promotions and reallocations must be limited to 1 per cent of the payroll. By frantic efforts the necessary downward adjustments were made and our revised recommendations submitted to the Department on January 16. It is hoped that they will be acted on so that they may become effective January 16.

- - - - - - - -

Fire seasons which do not close until January 7, as was the case this year in Southern California, raise cane with the chances of Forest officers securing any annual leave. While in Washington working on the review of Ranger District Analyses, Mr. Pitchlynn has presented a convincing statement to the National Federation of Federal Employees, and it is hoped that the pending legislation may provide such authority for Department heads that under similar conditions leave lost in one year may be taken in the following year.

- - - - - - - -

Twenty rather interesting projects to add lands to National Forests or to extend the general exchange authority to lands outside the exterior boundaries of National Forests are pending before the present Congress through the introduction of 27 bills in authorization thereof. However, it is the feeling of the President, Director of the Budget, Chairmen of the House and Senate Public Lands Committee, and the Secretaries of the

Interior and of Agriculture that legislation of this character may well be deferred until the Commission on the Conservation of the Public Domain, appointed sometime ago by the President, has had an opportunity to conclude its studies and submit its recommendations. Because of this fact action on legislation affecting unreserved and unappropriated lands is not probable in the near future. The Secretary of the Interior, Secretary of Agriculture, and Chairman Colton of the House Public Lands Committee are inclined to believe that one exception to this rule should be made, namely, that of the proposed addition to the Boise National Forest of lands draining into the Arrow Rock Reservoir, where long continued overgrazing and repeated fires have created an acute and urgent situation warranting early action and where the issue is so clear cut that little doubt exists as to the proper disposal of the lands involved.

- - - - - - - - -

On December 29 a fire at the Bessey Nursery, Halsey, Nebraska, destroyed part of the machine shed, and caused a loss of between $3,000 and $4,000. The loss might easily have been much greater, for the wind, after blowing a gale all the morning, had died down somewhat before the discovery of the fire. The reservoir on the hill saved the day, for the main fire pump was on the building which was aflame.

- - - - - - - - -

Information has been received from the Solicitor's office that the condemnation proceeding instituted to secure a clear title to the addition to the Monument Nursery has resulted in fixing a price for the land of $12.000, which is the same as was previously agreed on with the owner of record. The acquisition of this land will complete the program of nursery purchases under the special authorization obtained in the spring of 1929.

- - - - - - - - -

District Forester Show has been requested by the Forester to represent the Service at a hearing before the Agrlicultural Committee (not the same committee before which Mr. Kelley appeared) on the Englebright Bill. Mr. Show has accepted the assignment and is collecting material for use in his presentation on this important bill.

- - - - - - - - -

Supervisor Taylor of the Deerlodge Forest is in Washington preliminary to starting on a tour of Forest Schools. The plan of sending some western Supervisor around to the various schools which have little opportunity for contact with the Forest Service was instituted three years ago. It was designed to afford the students an opportunity to learn first hand something of Forest Service working conditions, to interest students in Forest Service employment, and to effect a closer contact between the Forest Schools and the Forest Service. A different forest region has been represented each year.

The trip this year will start at Pennsylvania State College on January 20 and will terminate at the University of Minnesota about March 15. Other schools to be visited will include Yale, Connecticut Agricultural College, the Universities of New Hampshire, Maine, Syracuse, Cornell and Michigan, Michigan State College, and Purdue and Iowa State Colleges. Lectures and slide exhibits will be supplemented by personal conferences with the students and faculty.

- - - - - - - - -

Glen A. Smith, Assistant District Forester D-1, and Fred Ames, Assistant District Forester D-6, are in Washington on short details to the Offices of Range Management and Forest Management, respectively.

ALL SHOT UP

By H. T. Phelps, Fremont

A recent trip to Slides Mountain Lookout, where a new steel lookout tower is nearing completion under the direction of Ranger Langfield, disclosed a new wrinkle in steel erection. Karl had been warned by Ranger Young, who erected a tower on Bald Mountain last year, that he might experience trouble in making the bolt holes in the braces and frame work coincide. He gravely informed Supervisor Brown and myself that he had carefully thought over this difficulty and after much deep cogitation had arrived at a solution. Placing Al Cheney, who is famed as a rife shot, on the ground about 50 yards from the tower armed with a 30-30 rifle, he proceeded rapidly to erect the tower. When trouble was experienced because a bolt hole did not quite match its counterpart, he would mark the place where the bolt hole should be and then calmly signal to Al, who would promptly shoot a new hole through the steel at Karl's mark. The work moved along beautifully, fortified thus by Al's 30-30 and a plentiful supply of chewing tobacco for Al and MacDonald, the other member of the construction crew. We approved of Langfield's unique method of boring holes, although a twinkle in his eye as he gravely elaborated on details gave us a qualm or two of doubt as to his absolute veracity. He anticipates considerable delight in crowing over Young at their next meeting.

The boys did an excellent job of erection. The new tower takes Slides from the category of secondary to that of primary lookout. Every other primary lookout on the Forest is now visible from Slides as well as Yainax and Walker Mountain.

MCGOWAN LEAVES SERVICE

By E. A. Sherman

The transfer of Principal Attorney Daniel F. McGowan from the Forest Service to the Department of Justice took effect January 16. Mr. McGowan's new position is that of special Assistant to the Attorney General, by whom he has been selected to handle the litigation with the Northern Pacific Railroad as authorized by a special Act passed by Congress upon the recommendation of the Joint Congressional Committee which investigated the Northern Pacific grant. Mr. McGowan will be assisted by E. E. Danley of the regular Justice staff, who made a study of this case for that Department during the Congressional investigaion. Mr. McGowan's advancement to this position in the Department of Justice is the natural outcome of his sucessful management of this case for the Forest Service during the Congressional investigation. His friends in the Forest Service rejoice at the recognition which he has won solely on his merits as an able and indefatigable public servant of unflinching courage and integrity. In dealing with the situation in connection with the Northern Pacific land grant he took a case of mammoth proportions and amazing complexity, subjected it to an illuminating analysis, and secured the unanimous backing of the Joint Committee of the relief measure which is now the law. This measure calls for the adhudication of certain differences by the court, and it is this litigation that Mr. McGowan will handle in the Department of Justice.

Mr. McGowan entered the Forest Service, by transfer from the War Department, as a clerk in the District Office of Operation at Portland, December 1, 1908, at a salary of $1200. He has therefore come up from our ranks and has grown to giant stature among us. His transplantation to the Department of Justice leaves a great gap in our organization, and I imagine that "Big Dan" has had to swallow a lump in his throat many times as he contemplated leaving the men with whom he has worked so closely and effectively for over two decades. We will miss him, but at the same time we will have the satisfaction of feeling absolutely certain that in the Northern Pacific case the public is being represented by an advocate of unsleeping vigilance, who will be satisfied with nothing less than justice and equity and will seek for nothing more.

ANDY SCALES HIS LAST LOG

By John E. Gribble, Crater

Andrew T. Poole, 60 years of age, was one of our early district rangers, having served in that capacity in the Trail Creek District on the Crater National Forest from 1909 until 1926 when he was transferred to timber sale work in the Service. Andy had not been physically himself for a year or two and in October, 1929, he went from Lakeview, where he had been since June, 1928, to Reno, Nevada, for a mastoid operation. He succumbed to the trouble before being operated on.

"How much mankind is like the trees! We know of some both sleek and tough and others only outwardly rough. Those outward signs may not go through; beneath rough coats are fine hearts, too," - and Andy's was one of those fine hearts sometimes hidden beneath an outward roughness. He was practically always jolly and good-natured, witty and ready with a joke and an excellent story teller; but withal, I do not recall ever knowing him to tell a tale to injure his fellowman. He was a loyal friend and a good Forest officer, and probably did more for the Service and to maintain harmony in his ranger district than any other Forest officer could have done in those early trying days from 1906 on for many years when there was so much bitter opposition. Andy knew every person in his district; he lived among them and helped them, and the fact that he had so much help and cooperation speaks volumes for him. In the summer of 1911, I was with Andy two or three weeks in his district, checking up on campers, chasing fire-bugs, or those very careless with fire. We cautioned many and caught a few. Some of the latter nearly escaped by intrigue and after their cases had gone to the Department of Justice, but due to Andy's loyalty and honesty they were finally fined for leaving their camp fire. Andy was an excellent woodsman and hunter and a most genial woods companion. He had many experiences among the wilds and wild life and could relate them in a most fascinating, and at times, hair-raising way. We who worked with him much knew him best and will miss him most. Peace be with our friend and fellow-worker.

FIFTY-SEVEN YEAR OLD CROSS TIE

A fifty-seven year old cross tie was taken from the M. K. T. lines near Eufaula, Oklahoma, last summer. A gavel was made from this tie and presented to the President of the Katy Veterans Association at their annual meeting on Labor Day. This track was laid in 1872 when the railroad was built through Oklahoma and Indian Territory. The ties were cut in the immediate region or farther south, and were bois d'ace (osage orange). There was no evidence of decay in this tie although the exposed surfaces are weathered. It outlasted the original 56# iron rail and successive steel fails of 52#, 63#, and 66#.. Ties laid at that time are still giving satisfactory service under 85# and 90# rails. - F.R.J., District 2

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture.
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIV, No. 5 WASHINGTON, D. C. FEBRUARY 3, 1930

WHAT ARE WE GOING TO DO ABOUT FOREST FIRES?

By Henry L. Spencer, Gunnison

I have just read with interest the three articles in the December 30 Service Bulletin, touching the fire problem;- the first by Wheeler advocating an increased expenditure of funds for education and protective improvements to prevent fires from starting; the second by Witham holding for the controlled burning of hazard areas; and the third an anonymous letter on the last page advancing the water truck idea - and not waiting 5 years to put it into effect!

Had I arranged the order of the Bulletin articles in question, I should have placed the anonymous letter on the front page - only the author's name would have been given - and I should have hailed him as advancing the most constructive idea of the three in forest fire control. Briefly, this preference would have been based on two points: the plea for increased use of water in handling our fire problems, and the do-it-now tone injected. So far as the water truck method goes, I have never seen it tried, but the basic idea of extending the use of the most efficient agency at our command to put out a fire is the vital spark of the letter. The do-it-now tone also emphasizes my feeling that sooner or later we are going to use a lot of water in different ways to put out these dangerous fires while they are small.

We must all concede that as long as we have forests we are going to have fires. The quotations in Wheeler's article showing that others feel we are not making progress in fire control generally covers my convictions on the subject, although my thought leans toward progress in suppression rather than prevention. With 430 lightning fires reported in District 1 during a short period of the disastrous fire season of 1929, we are fully advised that we are going to have the suppression problem with us in a major degree for some time to come - unless some genius discovers a method of heading off this danger with lightning protectors! Conceding the suppression problem as being with us permanently, let us proceed to an analysis in the rough of what we have accomplished in advanced suppression methods, and what our employers, the Dear Public, think of our accomplishments!

From a month spent on the fire line in Montana the past season - on three separate fires, two of which were on the Kootenai up near the Canada line and the other the disastrous Sullivan Creek fire 250 miles south on the Flathead - I gained the distinct impression that while District 1 has a wonderful fire organization for handling large crews of men and large fires - and spending huge sums of money in suppression - has numerous and competent lookouts with detection and getaway developed to the nth degree, and has a personnel, generally speaking, of as fine men as I have ever met there exists that inability to hit the small fire on the nose and prevent it from becoming a large fire, far too often. A shave in a barber shop at Kalispell, the small talk of firefighters around the camp fires, chance conversation on trains - all pointed to the fact that there is a very general questioning of the Service method of putting these fires out. We say the season was a bad one, with well-nigh insurmountable drought and lightning hazards. Granted, but we have had these same conditions before and we will have the same conditions again. If as Foresters, we cannot surmount these obstacles and prevent this appalling timber loss - what's the use?

Now we come back to the anonymous letter! What do city fire departments the world over rely upon to quench fires? Water, of course! What does the U. S. Forest Service rely upon mainly to put out fires? Trenching to mineral soil and waiting for the fire to go out, I believe is the general answer. But here pops up the joker: - the fire doesn't always go out. You all know what happens!

The difference between the use of water in a city fire and a forest fire is only one of distribution - not the basic effect in controlling the fire. And this method of distribution is apparently the stumbling block which most Forest officers rake their shins on, throw up their hands, and exclaim "impossible." But let us see just how impossible it is to give the use of water a definite place in the extinguishment of every forest fire that starts, remembering that as the problem now stands we are expending millions of dollars annually in fire suppression and still losing multiple millions in timber values burned.

Say we have a hundred acre fire and water is ½ mile away. We have fifty men and the control lines are established. Several spot fires ahead of the front are trenched. The Boss says to take part of the pack animals and the horse pack water containers he has previously ordered, and start packing water to put out the fire! There are six of the 15 gallon containers, making a container capacity of 90 gallons. Through intelligent use of the limited supply of water, the fire is gradually driven back from the control line and in 3 days the fire is out! Bug-house Fables!, the wise ones say, yet this is a fact of actual accomplishment and not a conjecture. In twenty years of fire fighting experience I have made it a hard-boiled rule to start the water brigade just as soon as the control lines are finished, and the result has always been quick time in reducing a fire to that state we have in mind when we tell the nabob and tourist to put out their fires.

During my Montana experience the past summer I came in contact with and used the Pacific Pumper. A wonderful addition to our fire fighting equipment where water chances are available - yet I found this most efficient tool had no recognized place in the fire fighting work. What I mean by this is best illustrated by the criticism of a superior officer when the pump was used for methodically and effectually putting out a fire for a length of a quarter mile of fireline. "The pump is only useful in emergencies," this officer said to me. I would say the pump is very useful and efficient to prevent emergencies!

What is the present status of our standard fire equipment for caches? Just sufficient water containers to provide drinking water for firefighters! If one wishes to use water on a fire he is forced to encroach on this supply, or make a raid on the cook's kitchen buckets. Without being entirely familiar with the smoke chaser's equipment of the Northwest, I understand no provision is made for water containers. It is true that it is often a hard job to find water after one finds the fire - and a harder job to pack it to the fire after it is found. But the main obstacle, I believe, is that most men do not understand the amount of execution which can be secured with a gallon of water, expertly applied.

The use of water on forest fires - where water has to be packed on mules - requires expert application to get the best results. Under such circumstances to consider packing water for untrained men to pour on the fire would be to consider failure in its use - but with trained men, and men capable of quickly learning the art of pouring the water, the method yields sure and positive results. To get down to the concrete advantages of the consistent use of water on every fire I will state that, taking the average Class C of less than 100 acres, 25 per cent of the elapsed time can be saved; danger of a blowup is steadily diminished from the time water use is commenced, and the presence of the full crew is fully occupied until the fire is out. The presence of the full crew may not seem to jibe with the "trained men" statement above, but in all crews of fire fighters there are those who have large chest measurements and small containers for their thinking apparatus - and vice versa. I would put the man with a 44 jumper and a No. 2 hat to packing water and the vice versa to pouring it.

STILL MORE FIRE

By E. N. Munns, Washington

Wheeler versus Whitham! Some scrap the Editor started in the December 30 issue of the Service Bulletin for 1929! And that wrinkled Professor Coonradt: - I bet Whitham would "sure coon" the Prof were he caught on his Forest.

But who is right, Wheeler or Whitham? How important is prevention as a cure? Has anyone discovered whether the Cape Cod experiment fell in a 3-year period when the fire hazard was less than normal because of the weather, and, if so, had it anything to do with the case? Should we continue to compare horses with cows and continue to say "prevention does it," or should we look into the climatic data and determine how much Old Dame Weather helped?

But is Whitham right? How far would burning over some 4,000 acres have reduced the Kaniksu fire menace? Must fire always be harmful? Can fire ever be used as an agent for good? Is Whitham's proposal any safer than "light burning?"

There is merit in Wheeler's proposal, and I'm for Whitham and what is left of the Kaniksu. Perhaps we should demonstrate whether fire cannot be used in old slashings to reduce a fire menace in the western white pine type. Perhaps the 200-acre tract might be a good place to try it out on the dog, and such a proposal perhaps should be made a matter for a Fire Committee of the District or region to examine into and to follow up in detail. The reduction of hazard is and should be recognized as a legitimate fire preventive, as much so as silver-coated words from a golden throat. But Wheeler may be right, and the damage, direct and indirect, be too great to warrant adoption, and the Kaniksu plan, as with "light-burning," might result in more debris than would be consumed.

What of hazard reduction? There are many high hazards: snags, road and trail brush, slash, wind-falls, snow-breaks, and others. We used to hear of sporadic attempts to reduce some of these to innocuousness, such as that noble experiment of the Modoc and other California Forests, where snags along roadways and the like were cut or burned down. Has the experiment been a failure or merely forgotten; or has the snag menace been entirely removed? One wonders how many Forests really tried snag felling as a hazard reducer, and how far the practice succeeded. Perhaps burning down of snags is of value in only a small part of District 5, but has it been fairly tried elsewhere? Has snag blasting, as developed in the Northwest, had a real chance to show what it can do? Are such practices to be discarded and so come to rest in a sort of limbo?

One cannot help wondering whether there is not an opportunity for a systematic and thorough study of hazards, their kind, location, and possibility of abatement; whether serious and conscientious efforts could not be made locally to reduce them; whether all means of their reduction have been exhausted.

This is the time of the year when the various Investigative Committees meet. Should not some ranger districts, some forests, or perhaps some district offices be assigned the task of rating fire hazards? A hasty perusal of District Programs reveals no such project assigned to a Forest, or to an office in a District, other than in California where the District Forester is personally in charge of the study.

STILL MORE ABOUT FIRES

J. C. Whitham in "More About Fires," December 30 issue of the Service Bulletin suggests burning in cut-over Idaho white pine areas as a fire protection measure. Department Bulletin No. 1493, "Timber Growing and Logging Practice in the Douglas Fir Region," by Thornton T. Munger, Director Pac. N. W. For. Exp. Sta., pages 9 and 10, has some things to say that will apply equally to the Idaho regions. "The theory has sometimes been advanced that broadcast slash burning is a necessary measure in securing reforestation, in that it bares the ground and stimulates germination; but detailed study strongly points to the conclusion that reproduction of Douglas fir starts more promptly and more abundantly where the slash is not burned. A comparison of a considerable number of burned areas with similar but unburned logged-off land, in each case quite recently cut over, shows 10 or more seedlings on the unburned to every seedling on the burned ground. * * *" "The chief reason for slash burning as a forestry measure is to reduce the fire menace of the vast amount of dry litter, that there may be less chance of accidental fires later. * * *" "Nevertheless a slash fire, no matter how intensely it burns, never leaves an area immune to subsequent fires. In this region even the most thoroughgoing burning fails to consume all the inflammable trash that is on the ground; many of the coarser limbs, tops, cull logs, and rotten windfalls are left; some of the duff is only charred on top; the standing snags are not burned down; and the unmerchantable green trees that are left may be killed but are not consumed. Areas burned by a good slash fire have been known to reburn the same year, though ordinarily the second fire would not cover all of the surface. All too commonly a part reburns when the fresh slash on the adjoining area is burned. Following the first slash fire, various weeds—mostly those not found in the virgin forest—take possession of the ground and create a vegetative cover which, dying and drying up each year, adds greatly to the inflammability and to the danger of subsequent fires. Chief among these weeds are fireweed, hawkweed, pearly everlasting, bracken fern, and thistle. * * *" "In certain portions of the Douglas fir region there is considerable small stuff in the virgin forest—understory hemlocks 6 to 16 inches in diameter, small cedars, and patches of unmerchantable pole wood. Some trees that are too small to be utilized remain standing after logging is completed; but trees of this nature, especially hemlocks and cedars, are very apt to be killed by the slash fire. They are killed, but not consumed. After a few years' exposure to the elements and decay they fall over, or their limbs break off, and the ground becomes littered with dry trash which is an invitation to fire. Where there is much of this small unmerchantable stuff left, the inflammability of the area is about as great after the slash fire as before. * * *"

In discussing broadcast burning with foresters and non-foresters, in the woods, on the west side of the Cascades, and from my own observations under a number of varying conditions, I have reached the conclusion that such burning even under favorable conditions is harmful and fails to accomplish the purposes intended. Except under very favorable conditions is it an aid to reforestation. Therefore, it should be abandoned for this reason alone. Secondly, it does not make the area burned inflammable. Slash burning destroys small twigs, leaves, vegetable soil, and injures or kills seed trees and seedlings. It does not burn large limbs, discarded logs, stumps, nor all the duff. After the fire come weeds and brush. There is still duff to burn and the soil is much dried out. With these facts before us, why should we still advocate broadcast burning logged-over areas. Put on more patrolmen for a year, or five years if necessary, keep fire out, let reproduction come in, keep the forest floor moist and soft. Build up the forest, do not destroy it.

WHERE FOREST FIRES STOP

First snows of winter now blanketing the northern woods accentuate contrasts. In southern Lake county they are especially striking. They tell a story and write a prophecy.

Scattered over the area are considerable stands of virgin timber interspersed among cut-over tracts. The denuded areas now are white with snow, against which the black and dark green of the virgin timber stands out sharply.

The remarkable thing is that the dividing lines are straight and the corners sharp. Successive fires have run over the slashings and through the brush. Fire after fire has run across the cut-over portions. They have pretty effectually killed out the young growth that followed the logging operations.

But almost without exception they have stopped at the edge of the cut timber, leaving stands unscarred. Forest rangers, trout fishermen, and those who have tramped through the woods in summer know the reason. The brush which followed the loggers grows thick, but offers comparatively little protection against evaporation. In periods of drought it dries out quickly and burns readily when ignited by lightning, by the cigarette of the careless fisherman, or in former times by the match of the vandal logger who wanted to make easier skidding for his logs.

Under the dark shade of the big trees, however, the undergrowth is sparse, the needles and fallen branches are damp, decayed, and close to the grounds. The boles of the forest monarchs are widely separated. Ordinary fires run up to the edges of the virgin tracts and stop.

Selective logging, complete utilization and wise disposal of slashings, such as are being enforced in National Forests and widely adopted by private forest owners, will go a long ways in reducing the cost of fire protection in future years. - Editorial in Duluth News - Tribune

THE EFFECT OF FIRE ON DOUGLAS FIR SLASH

To obtain definite information which can be used in formulating slash disposal policies, the Pacific Northwest Forest Experiment Station has begun a study of the slash problem in the Douglas fir region. Although there are numerous related but widely different aspects to this study, only one phase is treated in this brief summary, namely, the effect of fire on the volume of slash.

As used here the term slash includes all forest material left on the ground after logging, i.e., the cull logs, tops, and branchwood, and also the windfalls, semi-rotten logs and other debris which is present in every forest. Standing snags and trees are not here included.

Data gathered during the course of the survey indicate that after logging is completed there are per acre from 5 to 140 cords (based on 100 cubic feet to the cord) of large pieces, i.e., broken logs, tops, down trees, large limbs, chunks, etc., larger than 3 inches in diameter and 3 feet long. The reasonably efficient logging operation leaves about 62 cords of this large material per acre - not all of which, however, is perfectly sound wood - representing, on an average, about 335 pieces. In addition, there are from about 40 to over 200 cords per acre of small pieces of wood, i.e., small limbs, twigs, and other material less than 3 inches in diameter and 3 feet long; the average amount of this small material is about 90 cords. The ordinary acre has also 3 or 4 cords of rotten (disintegrating) logs. All told, there are about 155 cords of wood debris of all kinds, per acre. Snags and unmerchantable trees not felled with the logging operation may blow down and materially increase these volumes.

The slash fire removes from 9 to 49 per cent of the volume of the large pieces, depending upon the severity of the fire and the age of the slash. Ordinarily, a fire in fresh slash probably consumes no more than 30 per cent of the total volume of these larger pieces. If the slash is over 10 years old, it will be drier than when fresh, much of the bark will have fallen, and the fire will remove about 50 per cent of its volume.

A heavy fire consumes at least 95 per cent of the volume of small material. Even a light fire in fresh slash removes about one-half of the branchwood and other small pieces. In slash left unburned for 5 or more years after logging, a light fire, if it passes over the entire area, will consume three-fourths of this small material.

The fire reduces only slightly the diameter of the larger pieces of slash, but burns entire sections from them. This occurs chiefly where cull logs and down trees or snags are crossed; the amount of wood which a slash fire will consume depends somewhat upon the number of large pieces which are cross-piled by the logging operation.

Since many of the larger pieces of slash are burned in two, there are more logs after the fire than before (averaging about 90 per cent more large pieces), and naturally there is a greater proportion of short lengths than before the fire. After the fire, the large pieces usually are more or less isolated from each other.

Cedar slash appears to burn more readily than any other species. In an area where there is mixed cedar, Douglas fir, and hemlock slash, about 40 per cent of the cedar volume, about 30 per cent of the Douglas fir volume, and perhaps 10 per cent of the hemlock volume will be consumed by the fire. About 15 per cent of the volume of the rotten (disintegrating) logs will be removed by a heavy slash fire.

This quantitative measure of volume reduction in Douglas fir slash by a broadcast burn is but one phase of the slash disposal problem. As the study progresses other factors will be evaluated in the belief that a knowledge of the actual results of various methods of slash disposal will be of practical use in determining the wisest treatment of logged-off lands. - From Forest Research Notes, Pacific Northwest For. Exp. Sta.

YE EDITOR DISCOVERS

At a meeting of the Executive Committee of the Directors of the National Lumber Manufacturers Association, held at National Hot Springs, Arkansas, in December, a resolution was unanimously adopted recommending the creation of a Timber Conservation Board - to be appointed by the President of the United States - as outlined in the report of the Secretary and Manager to the Board of Directors at Longview, Washington, August 8, last. The purpose of the proposed Timber Conservation Board is to make a comprehensive investigation under public auspices of the nation's timber resources and their utilization "with a view to making public reports and recommendations of practical ways and means of eliminating over-production and consequent waste of timber resources, and promoting the conservation and replacement of the forests." Such a plan, it was stated, should, if intelligently conducted, be a help to any plan of securing conservation, stabilization, and the effective control of production. The Timber Conservation Board's purpose was further explained by Secretary Compton at the Longview meeting as "solely a fact-finding and public educational agency, acting under public commission and composed of representatives not only of the lumber and wood-using industries but of the public and the Government."

- - - - - -

The acute need for some form of power for use in logging operations which will be less dangerous from the fire standpoint has led to a preliminary study of recent developments of locomotives driven by internal combustion engines operating through Diesel generators and electric motors. Information gathered by the Branch of Engineering has been sent by the Branch of Forest Management to the Districts for consideration and local follow up. Diesel-electric locomotives are being used by railroads and large industrial plants in increasing numbers, and may ultimately prove practicable for use on logging railroads. Their use involves a much larger initial investment than for steam locomotives, but operating costs are greatly reduced.

- - - - - -

In response to a request from local Grangers and other organizations interested in watershed protection, the Secretary of Agriculture has authorized Mr. Sherman to hold a hearing at Wenatchee, Washington, on February 10-15. Assistant Forester Rachford will attend the meeting with Mr. Sherman.

A long standing controversy between the sheepmen and the irrigationists has been renewed in Congressional channels and by resolutions to the Secretary of Agriculture. It is claimed by those interested in watershed protection that the grazing of sheep on the watersheds has had a material influence on shortage of water. While those interested state that lack of precipitation has been one of the main causes for a shortage of water, they contend that the reduction of ground cover, grass, shrubs, etc., contributed materially to the serious situation in which irrigation interests find themselves. It is hoped that this hearing will bring out the facts on all sides and result in a better understanding and clarification of the policy of the Forest Service.

- - - - - -

Assistant District Forester Cheney of District 3 and District Fiscal Agent Buckner of District 2 are in Washington for the purpose of reviewing the recently compiled U. S. Code, with the idea of detecting erroneous interpretations on the part of the codifiers, obsolete matter included in the Code, and omissions. This work is considered of utmost importance since it is contemplated that Congress will pass an act making the Code the law of the land. At the present time the Code is used mostly for convenient reference rather than for authoritative support of contemplated actions in law. Later when the Code is given the force and effect of law the revised statutes and laws passed previous thereto will be revoked and superseded by the Code, which will contain all legal authority for the conduct of the work of the various Executive Departments.

- - - - - -

Assistant District Forester Heintzleman is in Washington for conference in regard to the waterpower licenses and timber sale contracts for the Alaskan pulp developments, for which conditional awards of timber were made in 1927.

- - - - - -

Stephen T. Mather, Director of the National Park Service from 1917 to 1929, died suddenly in the Corey Hill Hospital at Brookline, Mass., January 22.

Mr. Mather resigned from the National Park Service early last year because of ill health and was succeeded as Director by Horace M. Albright.

Stephen Mather might be called the "Gifford Pinchot" of the National Park Service. In the eleven years of his administration he was a tireless worker in building up the ideals and activities of his Service. Like the National Forests, he insisted that the National Parks were for the use of the public, and the steadily increasing number of visitors testifies to his work toward this goal.

Up to the time Mr. Mather became Director of the National Park Service there had been little or no effort to differentiate National Parks from other types of reservations nor to distinguish special uses.

The first annual report of the new Park administration indicated National Park purposes as "the stimulation of national patriotism" and "the fostering of knowledge and health." Mr. Mather built up the idea of the National Parks as areas of outstanding national interest in educational, scientific, and recreational values. A man of some means, he spent considerable amounts out of his own pocket in putting his Park ideals into effect. He was a skilled publicist and played up the "See America First" movement to advantage.

PHYSICAL EXAMINATIONS

Acting upon a suggestion received from the District Forester at Portland, arrangements have been made with the U. S. Public Health Service for free physical examinations for Forest officers who have been put to special strain and hardship on fire suppression work. The examinations are to be made at marine hospitals and other relief stations of the Public Health Service, a list of which has been furnished. The employee must meet the traveling expenses incident to the physical examination from his personal funds and should the examination disclose any injury or defect the Public Health Service is obligated in no way to give treatment, but the employee of course may initiate a claim with the Employees' Compensation Commission in the regular way if it is believed the injury or defect is attributable to official work.

It is believed the arrangement offers some measure of relief for those cases of employees who at times may have been exhausted by the strain of long periods of fire suppression work or by inhaling an excessive amount of smoke and yet can cite no apparent injury or accident such as would entitle them to a physical examination and treatment under the Compensation Act. In such cases a free examination may now be obtained through the Public Health Service upon proper certification from the official superior of the employee. The examination may enable the employee to have any incipient trouble promptly rectified and thus the examination may be the means of forestalling premature retirement for disability. - H. I. L.

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson, Secretary of Agriculture.
February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIV. No. 6 WASHINGTON, D. C. FEBRUARY 10, 1930

FINANCIAL NEEDS

By R. Y. Stuart

Supervisor Hurtt raises a very important question in his article "Forestry vs. Finances" in the Service Bulletin of January 13, to which response should be made. Unquestionably one of the great needs of the Forest Service is much better financial support. To make the National Forests fully productive, especially through complete protection, more intensive management, and an adequate program of planting, and to redeem other Service responsibilities, requires more adequate financing.

In recognition of this need a Five-year Financial Program has been recommended. This program covers not only all phases of National Forest work, but also Clarke-McNary cooperation, acquisition, and research. It is based on progressive increases by fiscal years. Among the major National Forest increases recognized are those for protection improvements, fire personnel, and planting, although substantial increases are included for many other phases of National Forest work.

This program is an effort at a systematic, plan-wise approach to our financial problem, based on the principles that our present financial resources are inadequate to develop the nation's forestry enterprise in proportion to the needs of the forest situation as a whole and that a long-time constructive enterprise such as forestry demands a stable and programmed system of growth such as only a financial program can provide.

While the increases carried in the 1931 appropriation bill are substantial, they are materially less than those contemplated by the financial program. Yet I feel that we have made progress in our approach to this fundamental problem. Our purpose is to spare no legitimate effort to obtain further favorable consideration of the entire program.

The Forest Service does not stand alone in the idea that the Federal forestry enterprise needs more generous support if the situation is to be comprehensively met. The American Forestry Association, with representatives of 25 national and regional organizations representing conservation, agriculture, industry, engineering, etc., conferred with the President in the autumn on the whole question of financial needs of forestry. There has also been urgent demand from California and other Western States for an enlarged protection improvement program. Finally, the Forest Protection Board, representing all Federal forest protection agencies has added its endorsement to the need for fiscal planning in forest protection on all Federal lands.

I would not have it understood by thus emphasizing the financial aspects of our work that more funds alone will permit reaching forestry objectives. Far from it. Funds are but one means to the end. Quality and spirit of service count just as strongly.

EVENT OF THE HOUR IN CONSERVATION

Speaking of the problem of overproduction of farm crops, as one of the phases of the big problem of placing agriculture on an economic equality with other industries, Chairman Legge of the Federal Farm Board recently said over a National hook up of the radio:

"Many good suggestions have come to the Board on the use to be made of excess acres on the farm not needed for the growing of ordinary farm crops. Time will not permit discussion of all of them here, but I wish to offer one that seems to meet with very general approval, namely, reforestation."

"Most people think of a reforestation program along the lines of large areas, commonly accepted in terms of the future timber supply, but there is another kind of reforestation that is equally important -- in fact, more important to agriculture -- and that is the restoration of the farm woods. In the past the woodland has played an important part in the prosperity of a large percentage of our farmers. It has furnished shade for livestock in summer and shelter in winter, posts for fences, firewood for the house and in other ways been useful to the farmer.

"In many areas these woods are disappearing. Why not restore them? In doing so we would only be following the example of many of the older nations that in the past have had to meet a similar situation as that now confronting us. If every American farmer were to devote 5 per cent of his present acreage to this form of reforestation he would have gone a long way toward meeting the problem of excess production and at the same time have added materially to the future value of his farm.

"The different States have a very important part to play if any campaign to restore our woodlands to the American farm is to be successful. That is in the matter of taxation. Some States have already passed legislation exempting from taxation land that is planted for the purpose of reforestation. Other States should do so, being specific to make such exemption apply to the woodland as well as land planted to timber on a strictly commercial basis.

"Reforestation and more and better pastures offer a sound long time program for getting our poorer acres out of surplus production."

A NEW SKIPPER FOR D-6

L. F. Kneipp, Washington

Granger's decision to embark upon the uncharted and turbulent sea of forest economics naturally created an immediate question as to the new hand to guide the destinies of District Six when Granger gave up the wheel. It will be no snap - no question of fair weather sailing or idling along before the wind. Within the District boundaries are the last major remnants of our virgin timber supply, the most complicated problems of adjustment between public and private timber production, the most difficult questions of industrial and community economics as influenced by forest policy. While District Six has never boasted that its fires are more numerous and bigger and more expensive than those of any other District, it has ahead of it many difficult problems of fire control. In range management, highway and road development, organizational progress and other fields it demands the best skill available. In other words, it needs a darned good man to guide it.

Of course, there are a number of men who measure up to the specifications. The problem was merely one of selection. In that process many elements enter in. But where the analysis of the current qualifications and abilities of a number of men give results so nearly equal that a selection is difficult, then it is equitable to cast back over past records. One of the men obviously deserving consideration has been a member of the District ever since its establishment and has made notable contributions to its progress and success. He is a man whose faith in and loyalty to forestry were so great that when his college work was completed he gave the best he had to the public service for a consideration of $25 per month; who worked constructively and well in many difficult assignments during the early years of the Service, not for the little salary he received but more for sheer love of the work; who as Supervisor of a difficult National Forest brought order out of chaos and left an imprint of his judgment and effectiveness that persists today; who as an Assistant Chief of an Office of Operation contributed much to the development of present Service standards of efficient accomplishment; and who finally as Assistant District Forester in the Office of Lands made himself the master of the whole field of Federal and State land policy and procedure, successfully and skilfully carried his District through a period of Forest Homestead hysteria that seriously threatened the integrity of the National Forests, and in the difficult work of Land classification accomplished results of outstanding merit; displaying all the while tact, judgment, diplomacy, regard for his fellow workers, sympathy and understanding with the people with whom he dealt, honesty, loyalty and all the other fine attributes of character that mark the Forest Officer par excellence. The question naturally arose as to what more the Forest Service could ask in the way of qualifications. The answer was obvious, and accordingly the Secretary has rewarded C. J. Buck's long period of worthwhile service by appointing him as District Forester to succeed Chris Granger.

ANGELES REPORTS ON LOUD SPEAKER TESTS

A very interesting experiment in the use of loud speakers in airplane fire patrol was conducted last summer on the Angeles. The Plane Speaker Corporation of New York City furnished one of their loud speaker sets and detailed Mr. McCauley, one of their engineers, to install the set. A Fairchild cabin plane was used for the experiment.

Mr. Murphy, who made all of the tests, reports as follows on the success of the experiment:

"1. The tests from my point of view were successful and especially so considering the poor ship and the inexperienced speaker and pilot.

"2. A more powerful set would be of more advantage to us than the present set as our conditions are such that while we could very likely make this set do, a more powerful set would simplify our problems.

"3. This speaker worked best at an elevation of about 900 to 1100 feet above the point contacted.

"4. The speaker had a side range of at least 1000 feet at an elevation of 900 feet.

"5. The highest velocity of wind at the point of reception was 20 miles an hour thus proving that the set tested would carry in a wind of at least 20 miles an hour.

"6. The idea of being able to speak over an area of considerable size must be abandoned. The best that we can hope for with even a larger instrument than the one tested is to be able to effectively speak to an area about 2000 feet in diameter at an elevation of 1500 or 2000 feet.

"7. A great deal depends upon the pilot and ship. For this reason the plane selected for the work should be of a high quality and we should have all pilots handling the ship trained in the maneuvering of the ship to obtain the best speaking results.

"8. Certain men should be designated as speakers and they should be chosen on the basis of clearness of enunciation and carrying quality of voice. These men should all be given training in the use of the plane speaker and become familiar with the best methods of use."

Commenting on Mr. Murphy's report, Supervisor Mendenhall says:

"I agree with Mr. Murphy in his report and I found that in taking part in these tests and listening from the ground, reception in general on the ground was better when the ship was around 1000 feet in elevation above us than when lower, and it was clear enough to justify further experiments or rather further use of a Plane Speaker on our ships.

"The most serious handicap in the use of the equipment that we had encountered was the limited amount of time that the operator could be heard; that is, he flew over any given point in such a short period of time that about 25 words was the maximum that could be received clearly during one flight over a given point. However, Engineer McCauley explained that this range could be increased to probably double the amount of words at the same elevation. The piece of equipment that was installed in our ship weighed approximately 65 pounds, a very small outfit, and by putting in equipment that weighed approximately 170 pounds we could just about double the range. I would recommend that if further use of this equipment is made we put in equipment that would have a range of about 4000 feet.

"I think our experiments with the light equipment justify our installing one or two, or possibly three, of these instruments in ships to be used next season. We had no occasion to fly over going fires but I am satisfied that communication would be quite satisfactory over fires and undoubtedly very effective and valuable to the men on the line; and I am satisfied that fire prevention patrol over intensively used canyons during Sundays and holidays with the speaker giving out fire slogans, announcing that the ship was a U. S. Forest Service patrol, would be very valuable from a public relations standpoint.

"The experiment was made, as Mr. Murphy mentioned, under adverse conditions as the ship was not suitable for our purpose. The pilot hesitated to take the ship back very far into the mountains. Mr. McCauley, who is an experienced pilot, gave us the advantage of his advice as to the type ship we should have for forest patrol work and he is of the opinion that we should have nothing less than a 300 or 400 H.P. motor for our purposes and says that the Wright J-6 is one of the best suited for our purposes, or the Wasp which he says is also a good motor.

"I might add that the operation of the Plane Speaker is very simple and most any of our observers could be trained to manipulate it in 15 or 20 minutes time."

WHAT TRAIL SURVEYS MEAN FROM A MAP STANDPOINT

By J. B. Yule, D. 1

Of recent years the Forest Service has carried on a heavy trail construction program for protection purposes. It will eventually require a veritable network of transportation lines before an adequate hour control system can be established. But such lines have not been fully utilized when completed. For protection as well as suppression purposes it is important that they be posted with mile posts and suitable signs which will identify by name or number all important topographic or cultural features. Also such information should be accurately placed on maps to assist in locating and reaching fires. To accomplish this a survey is necessary.

There has been much discussion as to the methods which should be used on such surveys. They have ranged from long compass and pacing traverses in unsurveyed areas where existing control is lacking to short transit and tape or transit and stadia traverses on areas which have previously been covered by survey. Planetable methods have also been considered.

It is evident that the method should be adapted to the type of country. The best method is the one which gives maximum results for the amount of money spent. This does not always mean that the cheapest method is the most economical in the long run. I am convinced that the staff compass, trailer tape and Abney level traverse, supplemented by the planetable for obtaining tie points where necessary, is the most practicable and economical combination on most western forests where fire map needs are the greatest.

In addition to the location of mile signs much information on and adjacent to the trail is obtained which is of great value for map making and map correction purposes. Where sufficient trails exist it is possible to obtain a good drainage map by this system.

To date 2,840 miles of trails have been surveyed, 740 miles of which were completed in 1928 and 1,630 miles in 1929; 11,330 miles remain to be traversed. The average cost per mile for 1928 and 1929 is $6.35 and 1¾ miles is the average per day for a two-man crew.

Elevations may be secured at a small additional cost and basic information for a topographic map may be obtained by triangulating to all adjacent features as the survey is in progress. At present sufficient men qualified to do topographic work are not available and additional men will have to be trained to properly handle the job. When this has been accomplished the last step in trail survey development will be completed.

CONSIDER YOUR READERS

After Jessie had been away to college a few weeks, her short epistles came back to the old home town signed "Jessica." Facetious Thomas, her brother, at once wrote in reply:

"Dear Jessica: Dadica and Momica went to visit Aunt Lizzica; Uncle Sammica is going to buy a new machinica but he doesn't know whether to buy a Fordica or a Dodgica. The old yellow cowica had a calfica and I was going to call it Nellica, but changed it to Jimmica because it was a bullica.

Tomica."

This little story might serve to show what the effect upon the lay reader would be when he receives an official publication couched in unfamiliar "high toned" language. Speaking before an audience of Extension Specialists recently, Assistant Secretary Dunlap discussed the great importance of making publications distributed readable to the person for whom they might be most useful. Too many specialists, he said, write for themselves alone - diaries of work or studies, as it were - and far too few write for the man who does not know but wants to learn. Give him the best chance that lies at the two ends of your pen or your typewriter.

SOME EIGHTY YEARS AGO

If a man walk in the woods for love of them half of each day, he is in danger of being regarded as a loafer; but if he spends his whole day as a speculator, shearing off those woods and making earth bald before her time, he is an industrious and enterprising citizen. As if a town had no interest in its forests but to cut them down! - Thoreau's "Life Without Principle."

YE EDITOR DISCOVERS

Big doings took place on February 1 when the Forest Service celebrated its twenty-fifth birthday.

On the first of February 1905 the Forest Service came into being through amalgamation of the old Forestry Division of the Federal Land Office and the Bureau of Forestry of the Department of Agriculture. In the twenty five years that have intervened the Forest Service has made notable strides in the development of sound National Forest administration and a public forest consciousness.

In celebration of its quarter century of achievement the Forest Service held a public meeting on February 1 in the auditorium of the New National Museum. Many speakers of national prominence were on hand. Three of the four Foresters who have guided the destinies of the Forest Service within the last quarter century were present - Gifford Pinchot, Colonel Henry S. Graves, and Major R. Y. Stuart. Other speakers included Senator McNary of Oregon, Chairman of the Senate Committee on Agriculture and Forestry, Representatives Clarke, Woodruff, Englebright, and Leavitt, and Acting Secretary of Agriculture Dunlap. Congratulatory messages were received from former Chief Forester Greeley and many others. The proceedings were broadcast over a nationwide radio network provided by the National Broadcasting Company.

On Saturday evening a reception and dance was held in Pierce Hall.

A checkup of old timers showed that 65 men and women still in active service have been with the Forest Service since its creation in 1905. These include 50 men and 15 women who were transferred to the Forest Service from the old Bureau of Forestry or from the General Land Office.

- - - - - -

The Chief Coordinator has called on the various Departments for suggestions on a proposed bill to provide for the traveling expenses of dependents, as well as transportation of household effects and other personal property, of a Government employee transferred to a new station. The draft in its present form would also authorize payment of similar expenses upon retirement of an employee from duty station to his home, the home to be designated within one year after retirement. The law as drafted would make the allowances subject to regulations prescribed by the head of each Department. There is apparently some prospect of such legislation being presented to Congress for consideration.

- - - - - -

Simpson's article indicates that he is cold on Lumberjack Statues. Somehow Ye Ed sees it differently. If we were an artist, a Remington, we would jump at the commission to paint him merely on the strength of Simpson's last paragraph. He would be leaning, let us say, on a peavey or pikepole and with a generous cheekful of tobacco or "Snoos" - and looking. Whada you think?

- - - - - -

Study of the extent to which small factories may be operated in connection with farms of average size, on the farm itself, in farm communities, and in villages and elsewhere, is contemplated in a resolution (S.J. Res. 191) introduced by Senator Sheppard, of Texas. The resolution would request the Senate Committee on Manufacturers to report "as to the advisability of requiring the Secretary of Commerce to investigate and determine as to the smallest capital, labor, and machine units with which, and the smallest distribution and population in which, articles of common use might profitably be manufactured"; and also to report as to the advisability of requiring the Secretary of Agriculture to investigate the possibilities of small rural industries operated in close relationship to agriculture.

- - - - - -

Another appointment in line with the cooperative plan of placing biologists at various forest experiment stations, to carry on wild life research under the McSweeney-McNary Act, is that of Oliver L. Austin, Jr., of New York, to the Lake States Forest Experiment Station.

- - - - - -

C. M. Granger, recently appointed as head of the Forest Survey, is in Washington conferring with members of the Forest Service and other Government and outside agencies interested in the Forest Survey. He expects to be in the East until about the middle of this month, when he will return to Portland where temporary headquarters for the Survey have been established

- - - - - -

Director Zon of the Lake States Experiment Station is in Washington for a short visit. On his way here he gave an address before the Forestry Club at the University of Toronto, Canada. While here he will spend his time in forwarding the North American Forestry Bibliography, promoting the second International Soil Congress to be held in Leningrad, Russia, next year, and consulting with members of the Branch of Research on the expanded program of the Lake States Station.

- - - - - -

Watch for the special anniversary number of the Service Bulletin, soon out.

SUPERIOR-QUETICO MOVEMENT UP AGAIN

The introduction by Senator Shipstead of bill S. 2498, by Representative Nolan of bill H. R. 6981, and by Representative Pittenger of bill 8968 again brings the Superior-Quetico proposal up for active consideration by Congress.

The basis of the movement is the proposal that the 14,500 square miles constituting the drainage of Rainy Lake, of which about three fifths is in Canada and two fifths is in the United States shall be managed as a great international forest with maximum consideration for the preservation of its recreational and wild life values. In furtherance of this idea the bills above referred to propose (1) the withdrawal of all lands in Federal ownership from further appropriation under the land laws; (2) the restriction of timber cutting on lands adjoining the lakes and waterways; and (3) preservation of all existing water levels through the prohibition of the construction of dams or reservoirs. The movement is inspired by a desire to check the proposed development for water-power purposes of the series of lakes and streams along the international boundary and is strongly supported by a wide array of conservation and wild life associations.

Present indications are that further hearings will be held by Congress on this subject and that there will be a lively difference of opinion between the agencies which favor wild life conservation and those who favor economic exploitation of the natural resources. Since the Superior National Forest is embraced within the area described in the bills, the Forest Service is of course interested, but since its administration of the Superior Forest would in any event adequately provide for the protection of natural beauty and wild life a bill which is not too drastic in its restrictions would not seriously complicate the administration of the Forest. - L. F. K.

THE WEST AGAIN INVADES THE EAST

While in quest of a hunger-appeasing morsel between trains in conservative Charleston, S. C., a few days before Christmas, my attention was strikingly drawn to the large number of Christmas trees, all exotic to Charleston's clime, that were being paraded in front of the numerous Italian and Greek fruit stores. Closer observation proved them to be balsam fir from the Northeast and Douglas fir from the Pacific Coast. These were the only coniferous Christmas trees seen on the Charleston market. A carload of Douglas fir shipped in from Puyallup, Washington, was selling at from 50 cents to $1.50 per tree and was apparently going like hot cakes. The balsam fir trees were selling at $1.15 to $3 apiece, depending upon size. The native holly trees were going begging. - C. F. Korstian, Appalachian For. Exp. Sta.

ONCE AGAIN, BELIEVE IT OR NOT

By Perkins Coville, Washington

It is probably unfair to take advantage of a typographical error in C. L. Hill's "What Price Big Trees" in the January 6 Service Bulletin, but the article is not without its humorous side.

Mr. Hill justifiably questions the fact that the "largest known Kauri pine tree" could contain 282,400 cubic feet of wood. But what a comeback! He gives a bill of particulars for an authentic (?) redwood which had (or still has) 14 logs scaling "361,366 M ft. B.M." Since the first M is a symbol for 1000 this scale can just as well be written 361,366,000 ft. B.M!

Shall we omit three ciphers or the M from the figure or shall we hold this matter over Mr. Hill's head? Personally I have already corrected the palpable typographical error and have filed this interesting and unusually complete data for future inquiries on Big Trees.

LUMBERJACK MEMORIALS

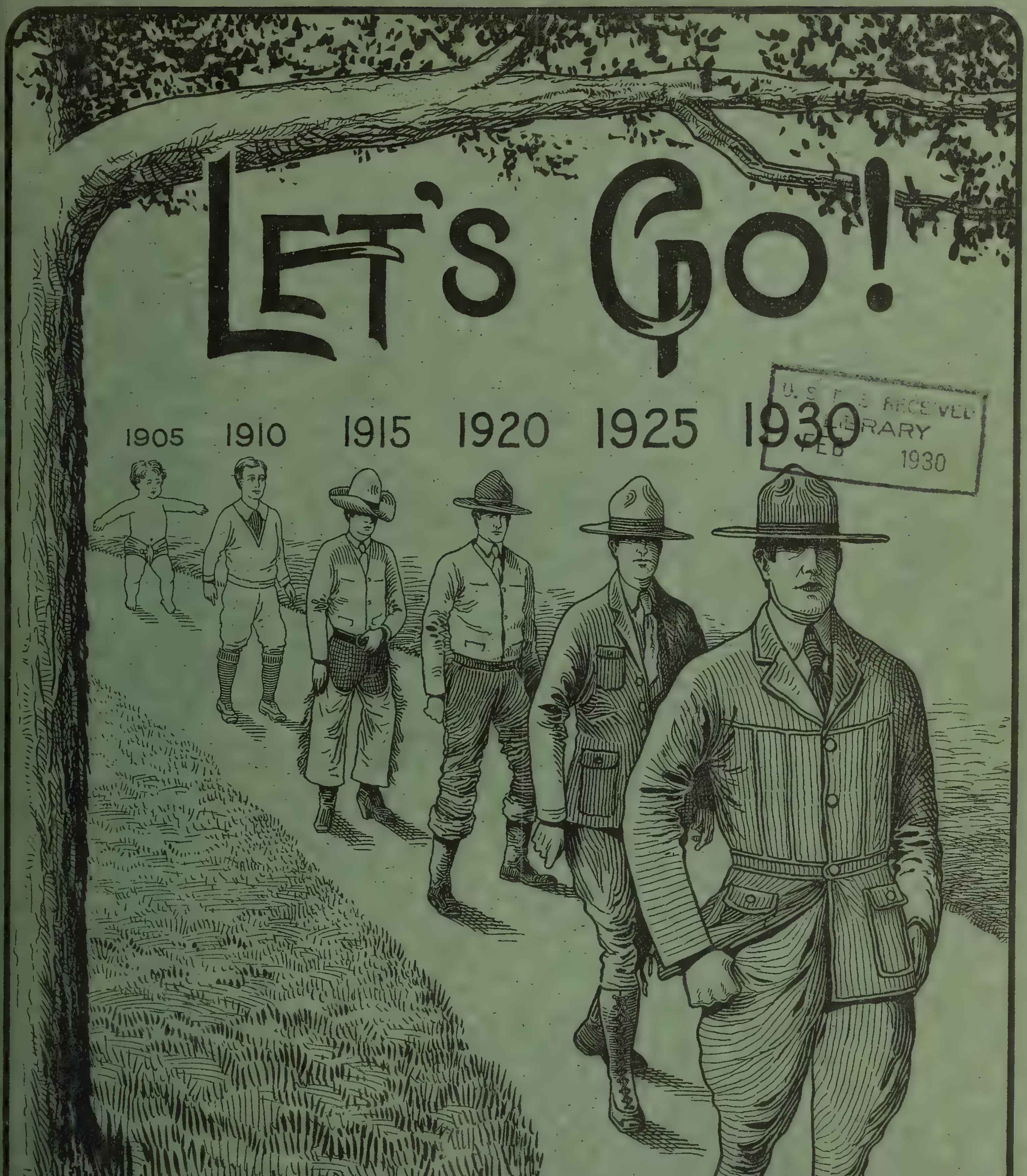
By A. G. Simson, Pacific Northwest For. Exp. Sta.

According to a recent editorial appearing in the Glencoe (Minnesota) Enterprise, that State has just appointed a "lumberjack commission" to do a piecework job of thinking on the subject of lumberjack memorials.

Apparently sentiment is pretty solid for a statue, but there seems to be some argument as to whether it should enjoy a place in the sun on the Capitol grounds or be relegated to the comparative oblivion of a pine thicket.

Somehow the whole idea leaves one cold. Statues of generals, politicians and pickle magnates are all very well, but an artistic interpretation of the Spirit of the Lumberjack—not so good.

The lumberjack of the "north country" was essentially a practical individual, sometimes he was picturesque--notably in his hour of relaxation in the shanties of some unlovely boom town--but never an artistic subject. Depict him as he was, hairy and wild, bundled from head to foot in voluminous wool pants, Brobdignagian artics, faded mackinaw, ears buried in a knitted cap and mount him on a pedestal of ravished "snoos" boxes. I defy you to find an artist who would accept the commission.


LET'S GO!
1905
1910
1915
1920
1925
1930
C. L. Taylor
1930

U. S. F. S. RECEIVED
LIBRARY
FEB 1930

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson, Secretary of Agriculture

February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIV No. 7 WASHINGTON, D. C. FEBRUARY 17, 1930

TWENTY-FIFTH ANNIVERSARY OF THE CREATION OF THE FOREST SERVICE

FEBRUARY 1, 1930

- - - - -

From President Roosevelt's Message
To Congress, December 1904

"I have repeatedly called attention to the confusion which exists in Government forest matters because the work is scattered among three independent organizations. The United States is the only one of the great nations in which the forest work of the Government is not concentrated under one department, in consonance with the plainest dictates of good administration and common sense. The present arrangement is bad from every point of view. Merely to mention it is to prove that it should be terminated at once. As I have repeatedly recommended, all the forest work of the Government should be concentrated in the Department of Agriculture, where the larger part of that work is already done, where practically all of the trained foresters of the Government are employed, where chiefly in Washington there is comprehensive first-hand knowledge of the problems of the reserves acquired on the ground, where all problems relating to growth from the soil are already gathered, and where all the sciences auxiliary to forestry are at hand for prompt and effective cooperation. These reasons are decisive in themselves, but it should be added that the great organizations of citizens whose interests are affected by forest reserves, such as the National Live Stock Association, the National Wool Growers' Association, the American Mining Congress, the National Irrigation Congress, and the National Board of Trade, have uniformly, emphatically, and most of them repeatedly, expressed themselves in favor of placing all Government forest work in the Department of Agriculture because of the peculiar adaptation of that Department for it. It is true, also, that the forest services of nearly all the great nations of the world are under the respective departments of agriculture, while in but two of the smaller nations and in one colony are they under the department of the interior. This is the result of long and varied experience and it agrees fully with the requirements of good administration in our own case."

Assistant Secretary of Agriculture, Former Chief Foresters, and Others Help Forest Service Celebrate Twenty-Fifth Birthday

Address by
R. W. DUNLAP
Assistant Secretary of Agriculture

My presence here today is, first of all, to serve as a visible symbol of an important past relationship. Throughout the twenty-five years of your history as the Forest Service, you have been in the Department of Agriculture. There is inspiration in recalling that we are all working together in the service of the Government - working for Uncle Sam; serving the people of the United States. But between you and your coworkers in other branches of the Department of Agriculture there is a closer association. Our field, it is true, is very wide, our tasks are diversified, our organization is extensively ramified; yet we are all of the same Department. And all the Department greets you, through me.

It is my privilege to bring you also the personal greetings of Secretary Hyde, who regrets that absence from Washington permits him to attend here only in spirit and by proxy. With his greeting I join my own. In my years of service in the Department I have come sufficiently into contact with what you are doing to understand pretty thoroughly its purposes, its accomplishments, and the spirit of public service that lies back of it. I congratulate you sincerely on your twenty-five years' record. Let me remind you, however, that the relationship between forestry and agriculture goes back much more than twenty-five years. It antedates even the establishment of the Department of Agriculture, in 1862. In short, the development of forestry and the development of agriculture are historically interwoven in this country, just as would naturally be expected; and although the advance of specialized knowledge and multiplication of diversified activities have tended to weaken realization of the fact, the kinship between forestry and agriculture remains.

The National Forests constitute the greatest single advance of the nation, up to the present time, in its attempt to solve the forest problem. As a nation we have been signally blessed by the abundance and the richness of the natural resources presented to us by a great virgin continent. Nothing else has played so fundamental a part in shaping our national history. The era of conquest of virgin resources is at its end. What we must now do is to learn to use with greater effectiveness our known resources. We must substitute orderly for haphazard development; we must take account of stock, and look ahead. The forest problem is simply one part of this general problem of intelligent guidance of our course, as against blind drift.

The gravest part of our forest problem lies in the eastern half of the country. Lands that have been devoted in the past to agriculture are proving submarginal on a very large scale. At the same time timber depletion is greatly enlarging the area of land in the East likely to become "no man's land" for lack of incentive to continue to own it and to employ it productively, for any purpose. We can not build up permanent rural prosperity on any other basis than that of sound methods of land use, and we have just three possible ways to use productively the great bulk of our land area - for plowland, for livestock production, and for forests. The right adjustment of these three forms of use to each other and the development of each to its greatest economic effectiveness constitute our greatest single economic problem today. Upon its solution must be concentrated the energies of the Federal Government and of the individual States, working together. Your participation will be essential. What you have done in the past is now history; the future has for you tasks no less challenging, and no less vital.

Address by

GIFFORD PINCHOT

I want to present to the radio audience, and especially to the West where they really need no introduction, the men and women of the United States Forest Service. There is no finer body of public servants under the Government, and in my time there never has been.

My mind goes back to the days when the forest lands of the Government had not a single forester to look after them, and the foresters of the Government had not a single acre of Government forest land in their charge.

Today the Forest Service is responsible for forests five times the area of the great State of Pennsylvania from which I come.

I am convinced that no other Bureau in Washington of anything like the size of the Forest Service, or of ten times its size, has ever exerted so large an influence on the welfare, and especially on the future welfare, of the people of the United States.

I was among those present when the Forest Service was born. That new-born organization had in its keeping the forest policy of the United States. With Roosevelt's backing its voice was final, and what it said went.

But that was by no means all. The Forest Service originated and applied the system of Government retention and control of the water powers of the Nation, and the Federal Power Commission today follows the lines the Service then laid down.

The Forest Service also had a hand in devising and carrying out the public land reforms which were among the notable achievements of the Roosevelt Administration.

It was present also at the birth of the Reclamation Service, and took its part in the solution of the great problems that Service had to face.

The idea of the Roosevelt reforms in the business methods of the Government came out of the Forest Service, and the most important man in framing and carrying them out was Overton W. Price, my friend and comrade in many a fight for things as they ought to be.

Roosevelt's plan for a reorganization of the Government Departments, a reorganization which emphatically would not have transferred the Forest Service from the Department of Agriculture to the Department of the Interior, had its source also in the Forest Service.

The modern movement for reform in the field of agriculture, which shifted the agricultural problem from the question of what the Nation could get from the farmer to what the farmer ought to have from a Nation, also sprang, through Roosevelt's Country Life Commission, from the Forest Service of those days.

Finally the greatest constructive policy of many administrations - the Roosevelt conservation policy - was born in the Forest Service, spread from it over the Nation, and from the Nation throughout the world.

The men and women who compose the Service today may well hold up their heads and carry on confidently and proudly in the strength of a great tradition.

But this is not the time for the Service to rest on its oars. It has done great work, but great work remains to do. There was never a more compelling call for constructive leadership in forestry than now. Great as was the achievement of saving the National Forests, for which achievement chief credit goes to Roosevelt, the problem of today is even greater still.

The forests of America were never more in peril than at this moment. There is not one State in this whole Union where new growth equals the drain on the forest.

Not one per cent of the timber cut in America outside the National Forests is cut under the rules of practical forestry. What forestry there is on private lands is too little to exert the slightest serious effect on the vast problem of our future timber supply.

Forest fires, due in large part to forest devastation, have already increased to something like two hundred thousand a year.

Our public forests excepted, forest destruction holds unchecked sway.

Facing these facts, the duty of the foresters of America, with faith in the forest and in the Nation, is clear before them. It is to destroy forest destruction in the United States.

For the future of our children, and the safety and prosperity of our country, forest devastation must be stopped.

Address by
HENRY S. GRAVES

I am happy to participate in these exercises commemorating the founding of the Forest Service for it gives me an opportunity to pay tribute to the work of Gifford Pinchot in organizing the National Forest system, and to pay tribute also to the public service of the men and women in the organization to whom the success of the forestry enterprise is largely due.

The event which you celebrate today was epochal in the history of forestry in the United States; it was momentous in its consequences for public good. Forestry assumed a new significance when its principles were applied by the Government in handling the vast domain represented by the National Forests. The successful management of these public properties and the educational and research work of the Forest Service have been the chief factors in stimulating such forestry work as has been undertaken by the States and other agencies. It was the influence of the National Forest undertaking more than anything else which led to a changed point of view regarding our natural resources in general. The conservation principle was not new, even in 1905, for it underlay all the public work in support of agriculture.

The Department of Agriculture was the greatest scientific and conservation organization in existence. It was appropriate and inevitable, therefore, that the administration of the National Forests, together with the responsibilities in other forestry matters, should be placed in the jurisdiction of that department.

Under these auspices a technical administration of the public forests was introduced, freed from the deadening influence of politics and with the strong and sympathetic support of a group of scientific men dealing with problems of land use which are inseparably related to those of forest production and management.

The success of the work of the Forest Service has rested on several important principles which at the beginning were emphasized by Mr. Pinchot. The underlying objective of the administration of the National Forests was to be the coordinated use of all the natural resources in the permanent interest of the public. The timber, forage, minerals, waters, agricultural lands, and recreation resources were to be developed side by side in a way to promote the permanent welfare of the local communities, of the States, and of the Nation. To carry out this objective a decentralized system of administration was introduced, under which the field officers were given authority to transact business on the ground in all but the most important matters. The National Forests stand as a demonstration of the ability of the Government to handle widespread national problems with efficiency.

The most important element of success of the Forest Service, has, however, been the character and spirit of its personnel. Mr. Pinchot was able to attract to the Service the best product of our schools and colleges, men who saw the opportunity for a career of usefulness and for honorable recognition of efficient work.

Tradition is a powerful influence in an institution and traditions often depend on the ideals and standards established in the early years of its history. This is certainly true of the Forest Service. The Forest officers are often called idealists and for that reason some call them impractical. It is because of their ideals that they have been able to overcome the difficult obstacles which they constantly encounter, that they have persistently held to their task in face of many discouragements, that in the work of fighting forest fires and other hazardous tasks these men repeatedly have been called upon to perform acts of heroism that are little known beyond the small circle of their colleagues.

It is a matter of great satisfaction that the Service has at its head a man like Robert Y. Stuart, in whom the organization, the profession of forestry, and the general public have a deep respect and implicit confidence.

A Message from
W. B. GREELEY

I am keenly sorry that I cannot join personally in the twenty-fifth birthday celebration of the Forest Service. But your warm messages make me feel that I have a part in it, like many other far-flung sons of the Service who also will be unable to join the family circle in person.

The Forest Service may review its twenty-five years of work and accomplishment with just pride. It has done what it set out to do. It has progressively built up the administration and service of the National Forests until they embody in fact the vision of our leaders twenty-five years ago. It has widened cooperation and research so as to afford true leadership and support in the constantly widening spread of forestry in the many channels outside of immediate governmental work.

The Forest Service has kept its ideals of public service, its spirit of scientific inquiry, its genius for hard work, and its responsiveness to constructive criticism. In the twenty-five years it has given the people of the United States a remarkable demonstration of the constructive development and use of natural resources without autocracy; of handling an immense volume of administrative detail without bureaucracy; and of leading the public in vigorous and decisive policies while yet serving it.

I sometimes think that one has to leave the Forest Service in order fully to appreciate it. Certainly my year and one-half of observation and contact from the outside have only served to strengthen my appreciation of the Forest Service and all its works, and my faith in its ideals and its mission. I know that the old spirit of always looking forward and ahead is just as vital today as ever; and that even while celebrating the achievements of twenty-five years with the merited gratification that is due, you are girding up your loins for still greater things.

I congratulate you most heartily on this twenty-fifth anniversary. It rightfully inspires us all with confidence and faith in our great task of forest conservation. And I wish you Godspeed for the next twenty-five years.

Address by
R. Y. STUART

Fellow-members of the Forest Service. Twenty-five years ago today a great experiment began. About sixty million acres of forest reserves had been set aside, in the course of the previous fourteen years, from the public domain, in 14 western States and Territories.

For nearly eight years the law authorizing their administration and requiring their protection had been on the statute books. For more than six years an administrative organization to take care of them had been developing. Through combining this organization with the Bureau of Forestry of the United States Department of Agriculture, the Forest Service was born. The experiment thus initiated was an experiment in the capacity of the Federal Government to manage and develop great public forests acceptably to the people, and soundly from the standpoint of technical practice.

Instead of 60,000,000 acres of forest reserves in fourteen States we now have 160,000,000 acres of National Forests in thirty States. From undeveloped wilderness areas the National Forests have become primary factors in sustaining the economic life of the West. Many millions of dollars have been spent in developing and improving them; many millions more in protecting them against fire. The timber that is cut is much more than replaced by growth. The public properties are being built up as well as opened up. Their watershed values, their range values, their wild-life values, their recreational values, are being conserved. In the East, National Forests of equal economic importance although not great in area are being acquired by purchase and similarly developed. So much for the results on the technical side.

On the administrative side it seems entirely proper for me to report that the Service no longer encounters hostility, either East or West. Its nearest neighbors are its warmest friends.

The public's confidence in the Forest Service is due to the signal skill with which our honored original Chief, Governor Pinchot, fashioned our organization, and the clear-sighted vision with which he laid down enduring fundamental policies; to the splendid leadership of his successors, Graves and Greeley; to the courage, devotion, and common sense of our field force; and finally, to the loyal and cooperative spirit that has always been conspicuous through the entire membership of the Forest Service. All have helped, each in his or her place, to the accomplishment of a common undertaking. Today we all of us, from the oldest veteran to the youngest recruit, participate in commemorating the labor of all, through the twenty-five years now ended.

Address by
HON. JOHN D. CLARKE, Member of Congress
Thirty Fourth New York District

Conservation is on the lips of all, and deep in the hearts of many of us; but the great, necessary conservation program that the public welfare demands is only beginning to be achieved.

Forest conservation means both saving and using. Because of our failure in the past to understand what values the forest has for us, we have misused and extensively destroyed what we must now expensively restore.

Reforestation through tree planting is an expensive way to get back the forest on a vast acreage of denuded land which, as we now can see, it would have been better for us all if we had kept in forest. Reforestation which, in harvesting the present forest crop, assures its replacement at once by a new growth is a wiser way, and a less expensive way, to provide for our forest needs.

Those needs are many. Forests are necessary not only because we must always have wood, and have it in abundance, but also because we must control erosion and make our streams run in full, even, and unpolluted flow; because we must have, in our hurrying modern life, abundant provision of opportunities for healthful outdoor recreation; because we must have woodland sanctuary for our native wild-life; because we must have all the ministrations that come to us from beautiful forests and a landscape fair to look upon. Forests please and satisfy the very soul of man, as well as serve vital economic needs.

I know, because the idle acres on my own farm, where over one hundred thousand trees have been planted, are becoming a rendezvous for the partridge, pheasant, and other wild life. This simple little unit bears its living evidence that conservation serves its high purpose in many far-flung fields when we plant trees.

I love to think of the splendid program under way nationally as well as in my own State. The Northern Development Company by a private subscription plans planting one billion trees in the next few years in New York State, and from our New York State Nurseries this last year were sent out twenty-five million trees on their mission of better tomorrows.

The Forest Service does well to celebrate its birthday of twenty-five years of constructive, forwardlooking service growing in importance with each year. In 1911 the Weeks' Law started us on our way with a purchase program; in 1920 there was an enlargement of that program. In 1924 the program for the protection of the watersheds of navigable streams was enlarged into a National Forest Policy, under the Clarke-McNary Law. That bigger program involves not only land purchases, but tree planting, and better protection to our forests. The bill I recently introduced in the House, and which was introduced in the Senate by Senator McNary, looks to a still larger ten year program. It has the approval of the Forest Reservation Committee that numbers amongst its members, the Secretary of War, the Secretary of the Interior, and the Secretary of Agriculture, as well as two Senators and two Congressmen.

In popular birthday language we remark "Many Happy Returns," may God speed the Forest Service in its forward-looking program for future generations. We sow as trustees, meeting our full duty that others may reap better tomorrows.

Address by
SENATOR CHARLES L. McNARY OF OREGON
Chairman of the Senate Committee on Agriculture and Forestry

It is always pleasant to participate in the birthday felicitations of a friend, particularly so long as the occasion marks a milestone on an ascending path and promises growth and progress, not retreat, decay, and the falling shadows of night.

I am happy to hold the Service as a friend. My own attitude toward it is best expressed in the various forestry measures which I have been glad to advocate on the floor of the Senate and see enacted into law. Some of them were bills which I myself introduced. I have advocated these various conservation measures because I was confident they were constructive, and that their enactment would substantially improve economic conditions to the benefit of all the people of the United States. The forest problem has its local aspects, and its sectional aspects - indeed, vitally affects both local and sectional welfare; but it is also a national problem and must be dealt with as such.

I have favored and taken part in the enactment of legislation for the extension of the National Forests, both in the West and in the East. As a western man I appreciate the benefits that have accrued to the West from the skilful administration by the Federal Government of the public domain timberlands and forested watersheds now included in the National Forests; and I have thought it desirable that additional areas of the public lands that are chiefly valuable for streamflow protection or for timber production be brought under the same form of administration. The Act of June 7, 1924, commonly called the Clarke-McNary Law, set up a procedure for accomplishing this. There are still several million acres, at least, of public lands in the West to which this legislation would seem applicable. It is to be hoped that means to expedite action regarding them may be found.

Another section of the same act enlarged the scope of the so-called Weeks Law, passed in 1911, by authorizing the acquisition of land for National Forests in the East for the production of timber as well as for the former purpose of regulating the flow of navigable streams; and the Act of April 30, 1928, commonly called the McNary-Woodruff law, authorized appropriations to accelerate the rate of progress in eastern land acquisition. As a western man I believe firmly that a considerable building up of Federal forests in the East is sound public policy and should have the support of the West because it is in the interest of the national welfare. Of our western forest lands nearly seventy-five per cent are in some form of public ownership, as against less than four per cent in the East. This means that for much the greater part of our western forests permanent productive use, as sources of timber supply, water supply, or both, is assured. The position of the East is relatively precarious. It is threatened with very extensive compulsory public ownership, eventually, of a most undesirable kind - the ownership of forest land that has lost all its value and been abandoned by its private owners in preference to holding, carrying, and caring for it through the long period necessary before it can be restored to productiveness.

My name is associated also with the Act of May 22, 1928, which formulated a comprehensive long-time program of forest research and authorized liberal appropriations to carry it out. The advancement of both public and private forestry imperatively requires a great increase in our knowledge of the right practices to use, of future requirements, of actual forest conditions and present supplies, and of the productive capacity of different classes of land in the various forest regions. We must do for forestry something like what has been done for agriculture through organized research - to the end that forest land may be put to use, not stripped of its values and abandoned. And to the same end, we must enlarge and intensify our public effort in fire protection.

If I were asked what in my opinion have been your chief contributions to public service I would be inclined to enumerate three points: First, your organization may be pointed to as one of the examples which prove that public service is not necessarily inefficient; wasteful, or extravagant; secondly, you have furnished an outstanding example of how a single central authority may through a decentralized organization secure the intelligent application of uniform principles of administration over large regions thousands of miles distant, yet without the deadening hand of inflexible bureaucracy but with due adjustment to local needs, and with opportunity for local participation in the working out of local problems; thirdly, your winning of the people of the West from an original attitude of widespread hostility to one of very general friendly appreciation and confidence is an outstanding achievement in democratic government. It is an illustration of how sound principles justly applied eventually sell themselves and are frankly accepted by fair-minded people, who willingly and frankly admit their original error, if error there may have been.

In speaking before you here in Washington and congratulating you upon the results of 25 years of service, I would not have you understand that this testimonial of confidence is based primarily upon the work which has been done here. That is not the case. In so far as my words may be construed it is a tribute to the earnest work which the officers of this Service have done in the fields and woods, in the protection of our forests, in dealing with the settlers and others who come in contact with the forest, in seeing that justice is done to the citizen in his dealings with government property, and that conflicting interests are wisely and equitably dealt with. To the extent that this organization has been successful in dealing with the National Forests I feel that it may be attributed not only to the ability, the honesty, and the zeal of your organization but also to the fact that you have looked upon your job as one dealing with large physical properties in place and not merely handling papers or written records at a desk. In other words, your organization has been formed upon the basis of serving the government properties and other forest properties scattered throughout the 48 States. The forests do not belong to you. They belong to the people of the United States. You are their servants.

The twenty-fifth birthday is not only a good occasion upon which to congratulate the one concerned but is also a fitting occasion upon which to proffer a few words of well-meant counsel and advice. At the end of this quarter of a century you are not laying aside your armor with the thought that the wars are over and that peace shall reign forevermore. If proper standards of public service are to be maintained the armor can never be laid aside or the guard withdrawn. Like liberty, efficient public service has its price - eternal vigilance. I would not be here today if I saw in this occasion only an opportunity to proffer congratulations. True, I see that opportunity, but in addition I see the much more worthwhile opportunity of urging your organization not to weary in well doing, not to smugly assume that the good work you have done in the past cannot be bettered in the future, but upon this occasion to take heart from the accomplishments of the past and to here and now determine that you will be satisfied only with still higher standards.

Address by
HON. SCOTT LEAVITT, Member of Congress
Second Montana District

I have come direct from the House of Representatives where I have just spoken on the significance to the Nation of this twenty-fifth anniversary of the Forest Service. I stressed more fully than I can here the importance of not only rounding out and completing the legislative enactments which constitute a sound program of forestry practice but of accepting that program as fixed and to be fulfilled I have had the exceptional privilege of serving as a ranger in those old days of the campfire and the trail, when National Forests were being established and conflicts of public opinion were sometimes bitter and sharp, and also of serving now in the Congress, when the public opinion of the Nation, clarified through the years, is being finally written into statutes establishing a firm basis of forest policy

The enactment of required basic statutes is nearing completion. The Clarke-McNary Act for the extension of forests and reforestation of denuded areas; the McNary-Woodruff Act authorizing funds for the further purchase of lands for the protection of watersheds; and the McSweeney-McNary Act setting under way a broader program of research, will be supplemented by the Englebright bill for a more definite program of development and protection. But the victory is not yet complete. The program thus formed must be considered a fixed and determined national policy. In the budgeting of funds, the required sums to make it fully effective must be considered obligated and inviolable, to pay the debt we owe to posterity to maintain and transmit in full the strength and natural resources of our country.

The situation was never as satisfactory in this regard than it is on this twenty-fifth anniversary. The Budget, the President's voice, has approved an increase of some $3,000,000 and the House has substantially accepted it in the bill passed on December 20. It now rests in the hands of the Senate. It does not carry out in full every step of the plan though it gives cause for rejoicing.

The consummation is coming when Congress and the Nation will say of the forestry program "This we have determined upon and this we are determined to do."

No agency has been more potent than the Forest Service itself in advancing the cause to this day of accomplishment.

The policy laid down by the Secretary of Agriculture this day twenty-five years ago in his address to the first forester, that all the resources of the forests are for use, and that this use must be brought about in a thoroughly prompt and businesslike manner, under such restrictions only as will insure the permanence of these resources, has been the practice of the Service for all these twenty-five years. Maintained as a working policy by the men of the trails in the far places, and by those in the offices, it has had much to do with that favorable public sentiment which has given approval and permanence to a profound and statesmanlike national policy. We offer today to those who have thus been of service the thanks of the nation.

Address by
HON. ROY O. WOODRUFF, Member of Congress
Tenth Michigan District

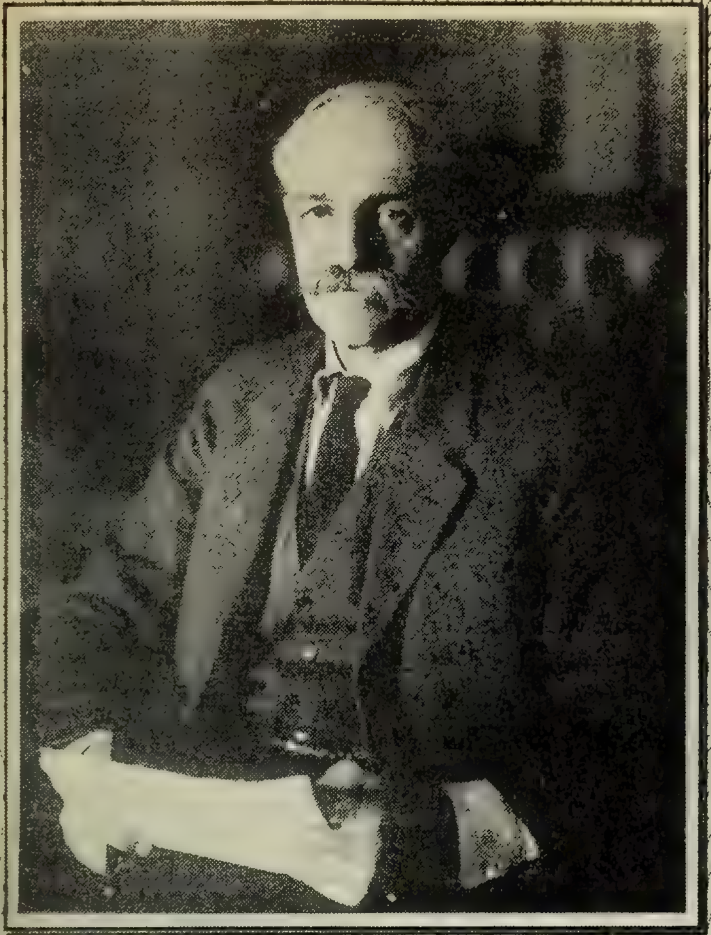
Major R. Y. Stuart, head of the Forest Service, very kindly has afforded me an opportunity to include a few remarks in the program of the twenty-fifth anniversary of the creation of the U. S. Forest Service as now organized. I feel honored to have this privilege.

I was brought up on a farm in Eaton Rapids, Michigan, at a time when boys knew something about helping prepare the winter's supply of fuel with the old bucksaw and the axe. At that time I gained a wholesome respect for forest conservation that has been strong all through the years, although the grounds for my interest in the preservation of our woods and forests have in the meantime undergone a change.

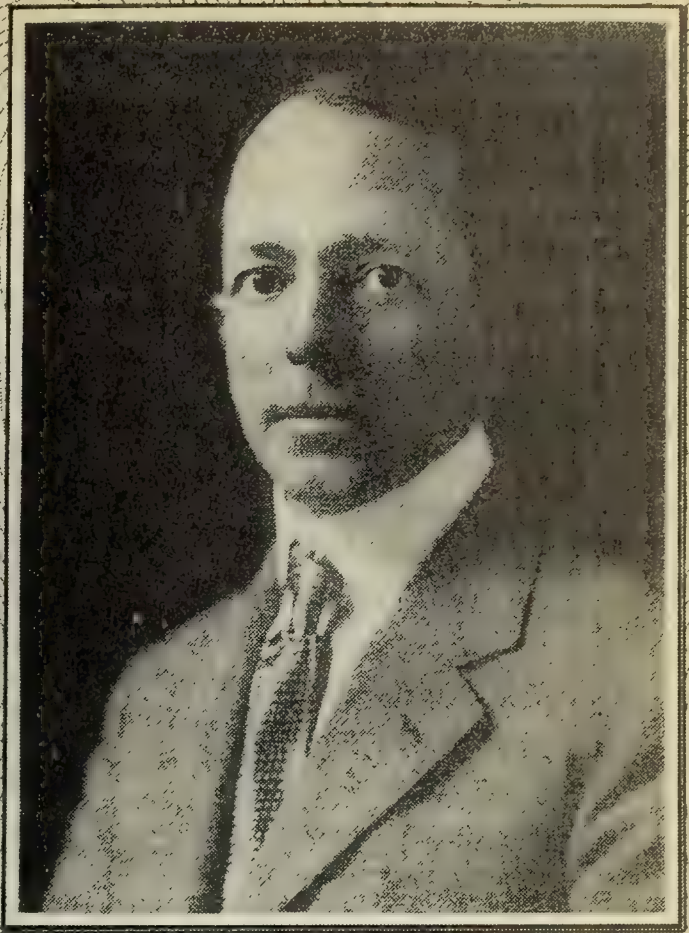
After graduating from college, I located in Bay City, Michigan, which was then among the first five lumber manufacturing centers of the United States. We had scores of mills producing veneer, wooden pails, hardwood flooring, and manufactured wood products of almost every description. To feed the maw of these mills the great forests of northern Michigan were stripped bare, and in a surprisingly short time the same plains and hills that nurtured this enormous wealth of timber were desolate.

I well remember as a boy that even among my elders the thought that the forests of Michigan would ever be depleted, was scoffed at as preposterous. I lived to see that day arrive with a vengeance. Similar experiences in other States aroused a national interest in the preservation of this priceless natural resource which was given expression by the Department of Agriculture and the Congress in the formation of the U. S. Forest Service twenty-five years ago. Hardly less startling than the sweeping away of our timber resources in Michigan has been the constructive program of reforestation that is progressing under the direction and supervision of the Forest Service now. In my Congressional District the Tawas National Forest Unit has been expanding for several years, acquiring denuded areas and planning the rehabilitation of half a million acres of lands once heavily forested. I rejoice to have had a hand in the legislation which was enacted April 30, 1928, providing a total of $8,000,000 over a period of three years for the purchase of cut-over lands, a part of which, of course, will be used to enlarge the forest reservations in my own State.

Under the leadership of the Forest Service 10,000 acres of such waste land taken over by the Government and once covered with splendid forests of white and Norway pine, were during the last calendar year planted with young trees so that a new forest will replace the old. The birth of the Forest Service a quarter of a century ago thus makes possible the recreation of new forests to replace the generation of the past. That your organization may grow in strength and stature comparable to the trees which you have planted, that your doctrine of conservation may spread throughout the land as the verdure of your forests replaces a barren waste, is my wish for you today, to which I would add the simple Anglo-Saxon hope for many happy returns.



GOVERNOR PINCHOT
1905 ~ 1910



COLONEL GRAVES
1910 ~ 1920

COLONEL GREELEY
1920 ~ 1928

MAJOR STUART
1928 ~

Address by
HON. HARRY L. ENGLEBRIGHT, Member of Congress
Second California District

On this the twenty-fifth anniversary of the institution of the United States Forest Service, I feel that I would be recreant to my public trust if I failed to compliment and congratulate the Forest Service on its magnificent list of accomplishments which have accrued to the benefit of the American people. Truly, it can be said to you, "Well done, Thou good and faithful servant."

In no State perhaps is there a keener public appreciation of the vital importance of Forest preservation and watershed protection than in California. The final limit of the expansion and development of the State and its ability to grow in population will be determined not by its land area but by its available supply of water, and this in turn is largely dependent upon the area of its forest-covered lands. What is true of California applies similarly to all of the Western States.

The need for federal action to protect and preserve the forests of California was early recognized by the State and in 1885 it created a State Board of Forestry. The first public statement of the Board declared that the United States Government, "should withdraw all the Government timber lands in the State of California from sale or entry," and "that such forest reservation should be guarded from fire and depredation." The statement of the California Board clearly demonstrates that even at this rather early date, it was recognized that the timber supply of the United States will measure our nation's progress in the centuries of tomorrow.

Considering the United States as a whole, in a scant century our original vast virgin forests have almost disappeared. At the present time we are drawing on our timber supply by use and fire at an annual rate that is four times as great as that of our annual growth of timber. Eliminating the factor of increase by natural growth at the present rate of consumption the total timber supply in all of the United States is only sufficient to last thirty-six years. The depletion of our forests and timber lands is a direct menace to our national prosperity and even to our national defense and security. The problem of perpetuating our wood supply is of the greatest fundamental national importance. That our timber lands are being depleted at a rapid rate is not because we use or cut too much timber, but because we permit too much timber to be destroyed by fire and other causes and grow too little timber.

Fire is the chief arch-enemy of the forest and the timber that it destroys and prevents from being reproduced annually is enormous. Last year more than seven hundred thousand acres were burned over. The average loss in the National Forests as a direct result of fire in terms of money damage is estimated to exceed twenty-eight million dollars annually.

The statistics of the Forest Service show that with the money that has been provided it has made great progress in the control of fires in the National Forests during the last twenty-five years. The United States Forest Service since its inception has been guided by high minded, well trained, and efficient men who today realize that still greater progress must be made in the fire control problem and that the present protective work is inadequate. To bring about adequate fire protection larger annual appropriations from Congress are necessary. In order to establish a definite policy and provide the Forest Service with funds sufficient to protect the National Forests from the wasting ravages of fire, I have introduced in the House of Representatives a bill designed to provide a suitable and reasonable program of expenditure over a term of years for fire prevention and control work.

The present rate of burning challenges the future of the National Forests. To gamble with such an uncertain force of destruction as fire with the National Forests at stake is not sound governmental policy; neither is it good economy. The Federal Government must face squarely the problem of perpetuating our last dependable stand of trees and fire prevention is the first great step.

OLD-TIMERS

By L. F. Kneipp

The first question presented by this subject is that of definition. What is, or was, an "Old Timer"? Since it is the habit of primitive men to fix events in history by some cataclysmic occurrence, Mr. Pinchot's resignation as Chief of the Forest Service will be regarded as fixing the final date for "Old-Timer" qualification.

By great good fortune, and I say this with becoming modesty, we still have a number of the "Old-Timers" actively associated with us today. Perhaps there is a great deal I could tell you about them that would interest you, and might or might not please them. But they have passed through such a series of evolutionary stages, have so kept pace with progress, that they are no longer the interesting diamonds in the rough that they were when the Service was in its infancy. And so, my ruminations will relate to that great army of men who gave what they could to this great movement which means so much to us, and then passed out of the picture.

To properly appraise the "Old-Timer" one must consider the age in which he worked and wrought. He had to deal with many of the men who had discovered and won the West; who still thought in terms of its superabundant natural wealth; who cherished to the last their habit and assumed right of unrestricted use of all that natural wealth; and who either could not or would not foresee the tremendous social and economic changes which were so closely impending, and which so imperatively demanded drastic reforms in the old order. The "Old-Timers" were not welcomed with open arms. They might, and often did, achieve a wholly personal popularity, but officially they were more apt to be persona non grata than the reverse.

There was at first no spirit of organization, such as we now know, in which men could find inspiration and stimulus. The directing agencies were remote. Requirements were prescribed for which neither logic nor reason seemed evident. Political considerations all too often influenced judgment and decision.

There were few material attractions. A man in the mines received $3 for 8 hours work, paid $1 for board and had $2 clear. A top cow hand got as high as $40 per month and found. The Ranger received at first $50 and later $60 per month, paid all his own expenses, supported one or two horses, in some cases with hay as high as $40 per ton and rolled barley as high as $2.70 for a 70 pound sack, provided his own quarters and office, if any, and lost a day's pay for every day he was sick or on vacation. On the old Pecos River Forest Reserve the Rangers were furloughed for the winter, and the Forest Supervisor demoted to Ranger rank and salary during the same period. Supervisorships were filled by the appointment of men from outside the Service, and no Ranger had any grounds for the hope that without political backing and purely on merit he could expect promotion to a Supervisorship

But here and there in the organization men developed to whom the work meant more than a pleasant means of killing time or regaining health; who foresaw even then the infinite possibilities of service opened up by the new movement; who found in its developing phases opportunities for creative accomplishment and self expression; and who stuck to the job despite its discouragements and meager material rewards. As time went on other men of like interests were attracted, so that when the event we are celebrating today took place there were many men in the Forest Reserve work who not only welcomed it but were prepared to contribute substantially to the fruition of the new ideals and objectives.

They were good diplomats, good psychologists, even good psychiatrists too. The West had called and retained many men of eccentric and sometimes of explosive temperament, who could be coaxed but not coerced. One had to know and understand their mental backgrounds and processes, to reason patiently, to await the psychological moment, or else to fight. One had to know the ways of cows and cowmen, of sheep and sheepmen, of mines and miners, of logging camps and lumberjacks, of fires and firebugs, even of saloons and saloon keepers, if he was to escape disaster. And one also had to have some vision of the impending order, to see and understand the reason and need for the new restraints and restrictions it was his duty to impose. But of actual forestry as we know it today the requirements were small.

In the main, the "Old-Timers" were gentlemen adventurers enthused with a new vision of service, rather than plodding workers. Their attitude was the natural result of the atmosphere and environment in which they lived. Beyond great valleys stretched range after range of blue, mysterious mountains, threaded only by trails, with only here and there a ranch or cabin or little mining camp. There were few roads, few telephones, few intrusions of the outside world. To cover their far-flung districts the "Old-Timers" jogged along on their horses, 15 or 20 or 30 miles per day, trailing their packhorse, or sharing the proverbial hospitality of ranches, cow camps, sheep camps, mining camps, prospectors cabins, logging camps, or wayside stage stations.

There were no meetings through which ideas could be interchanged, policies formulated or understood, and there were no explicit manuals of instruction covering every situation which might demand immediate solution. Often a man reached and executed his decision and then either kept still about it or reported it, as the facts seemed to warrant.

And then - as they say in the movies - came the dawn; that fateful date of February 1, 1905, which marked the event we are celebrating. The "Old-Timers" met it with mixed emotions - uncertain as to its ultimate consequences. But like a series of great waves sweeping the debris from the beaches of their thoughts came one startling pronouncement of policy after another so that within a scant half year those of the "Old-Timers" who were worth while knew that their dreams had come true, that infinite fields of service and accomplishment were being opened to those of them who possessed the capacity for service.

New ideals, ethics, objectives, concepts of public service, were set up. Men were brought together to discuss and understand them. System and method took the place of the old easy-going practices. Planning and accomplishment succeeded the earlier and futile process of merely wishing for things. The needs of the situation were made known to Congress, which met them with better legislation and more adequate appropriations. A new order was definitely under way.

New blood was at once attracted. The job became interesting to men who previously had ignored it. Men who had measurable records of successful accomplishment in the logging or livestock or mining or ranching business saw in the new picture the elements of a successful career, a worth-while opportunity for service, and here and there they quietly arranged their affairs and entered the Service frequently at rates of pay much lower than they previously had enjoyed, but with the certainty that in the work they would find compensations far exceeding the differences in their monthly pay checks.

A new era of constructive progress thus was initiated. In many ways it was the Golden Age of the Forest Service; at its close the spiritual and philosophical development of the Forest Service had reached the high plane upon which it since has been maintained.

Measured by present day standards of efficiency and technique the "Old Timers" might perhaps fall short. But measured by the standards of their time and environment they loom up as forceful, vigorous and effective agencies of national progress, who did their full part in translating vision into accomplishment; in reducing loyalty, courage, aggressiveness and good will to concrete and tangible instruments of human welfare and advancement

BITS OF OUR HISTORY

By Herbert A. Smith

The Federal Forest Service is celebrating its twenty-fifth birthday. It came into existence through the amalgamation of two previously existing units in the governmental establishment - the Bureau of Forestry in the Department of Agriculture, and the Division of Forestry in the General Land Office of the Interior Department. The Act of Congress providing this amalgamation took effect February 1, 1905.

That was less than three months after Theodore Roosevelt had been reelected President. If there had not been a Theodore Roosevelt it is improbable that there would be a Federal Forest Service. It was Roosevelt's espousal and championship of conservation that made the American people conservation-conscious.

The creation of Federal "forest reserves" began as long ago as 1891, and the development of an administrative system for them began under the General Land Office of the Interior Department in 1897. In the first years of the twentieth century there developed in the Department of Agriculture a well equipped bureau of forestry which embraced most of the technical personnel and built up most of the specialized knowledge necessary to run the "forest reserves" scientifically. This created the anomaly of Government forests without foresters to manage them in one part of the Government establishment, and of Government foresters with no forests to manage in another part.

The "Forest Reserves" were none too popular in the West. Under Harrison, Cleveland, and McKinley as well as Roosevelt they had been established, to a total gross area of 63,000,000 acres. Many westerners had objected vigorously. It looked like a very large "keep off" sign that would thwart the development of western resources and sacrifice the present to the future.

But Roosevelt insisted that "forestry is the preservation of forests by wise use;" that to be permanent the policy of public ownership and administration must come from "the intelligent conviction of the people themselves that it is wise and useful - nay, indispensable."

Forestry, Roosevelt said, "means making the forests useful not only to the settler, the rancher, the miner, the men who live in the neighborhood, but, indirectly, to the men who may live hundreds of miles off down the course of some great river which has had its rise among the forest bearing mountains."

Swiftly the process of giving effect to these principles went forward. The "old-timers" in the Forest Service of today still feel a little quickening of the pulse when they reminiscently recall the feverish activity and tremendous drive of those great days. Out of the personnel furnished by the two previous units now brought together Chief-Forester Gifford Pinchot speedily fused a new organization, youthful in spirit, tireless, enthusiastic, and inspired by his own high purpose and determination to get things done.

The work appealed to young men of capacity, venturous spirit, love of the outdoors, and zeal for public service. The West was still largely frontier, the reserves and the public domain unreserved forest land were still mainly unbroken wilderness. A vast public enterprise was in the making. Heavy responsibilities fell on young shoulders. Self-reliance, courage, and physical hardihood were at a premium.

In time public opinion began to make the Forest Ranger a sort of popular hero. But that was not the usual western opinion of the early days. At least, not in localities where feeling against the "reserves" ran high. And there were many such localities.

It took a while for the western people to find out that the Forest Ranger was not a hireling bureaucrat sent from Washington to keep them from utilizing the gifts of nature in their effort to establish themselves, but a friend whose purpose was to aid the sound, healthy development of a community to which he himself belonged.

As the whole policy of conservation developed into a sharp political issue, with powerful interests arrayed against it because it curtailed many of the opportunities for exploitation and appropriation of the sources of wealth, one of the stock subjects of invective was the Forest Ranger. It was sought to make him odious by painting him to the public mind as a ruffian, a petty tyrant, and a ruthless oppressor of the poor settler. He was called a Cossack; he was drawn in newspaper cartoons and denounced in Congress as an insolent dragoon pitilessly riding down women and children; or he was described as wearing a feather in his hat after the supposed fashion of a European forester and ridiculed as an eastern effeminate dude or a bespectacled college professor out of place. It needed good men to make headway against this sort of thing and conquer in the end by a combination of firmness, justice, patience, disarming tact, and true public service.

Had the "forest reserves" been in reality an attempt to put into cold storage the timberlands of the western public domain against the day when the East, like a spendthrift heir, had run through its share of the common patrimony, the end of the story would have been written long ago. But the issue of West against East was a false issue. The National Forest enterprise has always had powerful western backing.

To win and hold the West, it was clearly seen by Chief Forester Pinchot that National Forest administration must be made both truly businesslike and truly helpful to western communities and the building up of the western country. Wooden methods, slow and cumbersome procedure, and the habit of looking to Washington for all initiative and decisions of consequence while forest users waited for the red tape to unwind would, he knew, sink the enterprise no matter how benevolent its intentions. Both to insure quick action on the ground and as an antidote to possible aloofness and high-horse attitude, decentralization was vigorously pressed. On the day of transfer of the National Forests to his Department Secretary of Agriculture Wilson declared that the new principles which were henceforth to govern "can be successfully applied only when the administration of each reserve is left very largely in the hands of the local officers, under the eye of thoroughly trained and competent inspectors."

When, shortly afterwards, the new regulations appeared they bore the title "The Use of the National Forest Reserves." The "reserve force" had three chief duties: "to protect the reserves against fire, to assist the people in their use, and to see that they are properly used."

But the western element in Congress opposed to the National Forest enterprise fought bitterly. In 1907 they succeeded in attaching to the agricultural appropriation a rider prohibiting any further additions by Presidential Proclamation to the National Forest areas of Oregon, Washington, Idaho, Montana, Colorado, and Wyoming.

Roosevelt signed the bill carrying the rider on March 2, 1907. But he took care first, on March 1 and 2, to sign a set of 33 proclamations by which a dozen new reserves were created and a total of 14,698,689 acres was added to the National Forest system. Those who had favored the legislation were furious. "But you can't do it, Mr. President," expostulated one protesting legislator. "But I have already done it, Senator" was Roosevelt's suave reply.

A few figures will serve to show concretely, on the one hand, the expansion that has taken place in the work of the Forest Service in 25 years and, on the other hand, the march of decentralization. On February 1, 1905, the Forest Service personnel numbered 734, of whom 268 were in the Washington office and 466 in the field service. The present personnel numbers 2,710. Of these 197 are attached to the central office at Washington, and 2,513 are in the field organization.

When the Forest Service took charge of the Reserves they numbered 60 with a net area of some 56,000,000 acres of land actually owned by the Government. The present net area is 160,000,000 acres, embraced in 150 National Forests.

In the fiscal year 1905 the receipts from uses of the Reserves were less than $75,000, all for timber sold. During the last fiscal year the receipts were nearly $6,300,000, of which over $4,000,000 was for timber.

Today, the 150 National Forests are playing no small part in the national economy. Their protection and scientific management are helping to stabilize industries and communities dependent upon them, to insure regular water supplies, to check floods and soil erosion, and to afford recreation for millions. As public properties containing basic natural resources, they are being managed for continuous production.

Back of all progress in forestry is the need of sound knowledge of forestry principles and methods. Research has been a major activity since the Forest Service came into being. New methods and practices in forest management and wood utilization developed by Forest Service research agencies already have resulted in the saving of millions of dollars to agriculture and industry and to the public as a whole.

The public forests cover a vast area in the aggregate. Yet four-fifths of the total forest area of the United States is in private ownership, the bulk of it subject to destructive exploitation. The Federal Government, through the Forest Service, now is cooperating with the States in the promotion of private timber-growing and in improving methods of handling private forest areas by public assistance to forest owners in protection, planting, woods management, and tax reform.

While the Forest Service is celebrating achievements in the last quarter century, it realizes fully that its work is by no means done. It is coping with a tremendous problem - a problem which consists in essence of finding ways to keep one-fourth of the country's entire land area productive, to supply enormous quantities of wood that the nation will require each year, to perpetuate industries that employ over a million men and turn out products valued at over two billion dollars a year, to obtain the full benefit of forests in conserving soils and water, and to preserve their important social values.

The Forest Service has big objectives. Before it ceases its long-time fight to build up the nation's forest resources, it must see much more accomplished. It wants to see the organized forces of protection against fire, insects, and disease strengthened both on public and private land until losses are brought to the irreducible minimum. It wants to see the forest industries strengthened and stabilized and conditions brought about so that they can undertake orderly production and continuous timber-growing. It wants to see the forests playing their maximum part in the conservation of soil and water, in the regulation of streamflow, and in the prevention of floods. It wants to see the land which is best suited to forest use producing real forest crops and managed in such a way that its production will be continuous and never-ending.

FROM MR. LEAVITT'S ADDRESS TO THE CONGRESS ON FEB. 1, 1930

(Excerpts from Congressional Record)

MR. LEAVITT. "Mr. Speaker and Members of the House, I have asked time to address the House briefly because this 1st day of February, 1930, is the twenty-fifth anniversary of the Forest Service as presently constituted. The beginnings of forestry in this country are, of course, further back into the past. But the event of 25 years ago was the result of an awakened understanding on the part of the people concerning the urgent need to conserve what yet remained of our forests and watersheds, and to take the long look of wisdom into the future. From the event has flowed great benefit to the Nation, for the Forest Service, which was at first the very storm center, fiercely assailed, has become the rock on which the lighthouse of the entire conservation movement is planted. For this reason the silver anniversary of that service merits especial attention. - - - - - ."

"- - - I shall introduce a bill to make permanent the tribute of a grateful country to Roosevelt the conservationist. It will provide that there shall be an archway of stone from the mountains erected at the summit of the towering Rockies, in the midst of the forest wilderness where the Lewis and Clark National Forest joins that of the Flathead. It will be an archway spanning forever the great transcontinental highway which bears Roosevelt's name, and which is just now at the point of completion. It will be a worthy tribute likewise to all those whose vision and labor have saved these resources to the Nation. - - - -"

"- - -The duty of the Government is to consider its forestry policy, once established, to be a fixed obligation. The Budget, the voice of the President, has favored an increase of over $3,000,000 in the appropriations for the Forest Service the next fiscal year. The promises brighter than ever before. The appropriations bills which passed this House on the 20th of December carried most of those figures. It augurs the time when the authorizations will become more nearly accepted as our pledge to posterity, our pledge that our forest heritage out of the past, scarred, devastated, and depleted as it is by generations of misuse and neglect, shall be preserved and, as far as is yet possible, restored, and thus passed on to the future.

"To redeem this pledge and to meet this obligation we must go forward in the program of forest-land acquisition, especially in the Eastern States, and greatly enlarge the forces of protection and fire prevention.

"The National Forest Reservation Commission has announced its indorsement of an expanded program of land acquisition. Bills were introduced in December by Senator McNary and Representative Clarke of New York authorizing a purchase program of $50,000,000 over a period of 10 years, beginning July 1, 1932. That proposed plan should be adopted, and it should be treated not as a mere permission but as a fixed obligation.

"As to the future of forest protection, there is great encouragement in the words of President Hoover used in transmitting the recent Budget, which recommends a great increase in funds for this purpose. He said:

'"We can not hope to eliminate entirely the necessity for spending money in the suppression of fires but our efforts should be to minimize this necessity by more and more adequate protection measures. This is essential not merely to effect a saving in the cost of suppressing fires but to prevent the incalculable loss which results from the destruction of our forests. Such loss involves not only the timber itself, but the protection which it affords against soil erosion and floods. As the custodian of the National Forests, National Parks, and other public lands, the Federal Government is responsible for their protection. The obligations of this stewardship can not be met within the limits of the present appropriation, and it is for this reason that I am asking for an increase to commence a program of more adequate protection of our forests.'

"With those words he proposed an increase of $195,500 to a total of $2,237,000 for the suppression and prevention of fire; an increase of $50,000 to a total of $164,000 for the control of insects and disease; an increase of $300,000 to a total of $1,700,000 for forest-fire cooperation with the States; and an increase of $1,831,000 to a total of $2,191,000 for protection improvements in the forests.

"Let us note again with the most serious consideration the closing sentence of those words of the President:

"'The obligation of this stewardship can not be met within the limits of the present appropriation, and it is for this reason that I am asking for an increase to commence a program of more adequate protection of our forests.'

"So we come to the end of this 25 years of the Forest Service to find ourselves happily ready -

"To commence a program of more adequate protection of our forests.

"Gladly we join in that program.

"I find it difficult to close without a brief recurrence to sentiment. In retrospection I ride again with my old comrades of the mountains Some of them have ridden into the shadows to emerge on the lofty crests in the sunlight Many still follow the ways of the forest. I have a son graduating in forestry this year, to take up the trail where I left it. But we can all find here in the Congress on this silver anniversary day ample opportunity for service. It exists in the supporting of basic and fundamental forestry law. It lies in fixing a National Forest policy which will redeem the obligation we owe to the future." (Applause)

EXTRACTS FROM A FEW OF THE MANY MESSAGES RECEIVED

"I much regret that my late return from Chicago makes it impossible to participate in the twenty-fifth anniversary of the Forest Service this evening. Those of us who were part of the early organization under the inspiring leadership of Gifford Pinchot as well as those who are still carrying on can look back over the progress of the Forest Service during the past quarter century as a record of real accomplishment. To my old friends and to all I send greetings and best wishes.------"

E. A. Sterling

"- - All of us who were so fortunate as to have taken part in the organization of the Forest Service may on this occasion look back with great pride and satisfaction upon what has been accomplished. What a wonderful opportunity it was for real public service and how well the job has been done. Everyone in the Forest Service, no matter what their position, felt a personal responsibility to make good and there was a universal determination that we must succeed. In many ways it was like starting out to climb a mountain with neither trail nor compass, but with a firm resolution to reach its top.---------"

A. F. Potter.

"It is a matter of the greatest regret that distance and dollars conspire to keep me from putting my feet under the table with the Old-Timers on the occasion of the twenty-fifth anniversary of the Service. Really it doesn't seem as though we were that old. In fact, it seems but a few short years ago that G. P. dispatched me to Southern Cal. with instructions to put forests all over the flea-bitten, sun-baked, rattlesnake-infested mountains of that cornbelt Utopia, for the purpose of making two little streams flow where one flew heretofore.---- Here's wishing you all sorts of a good time at the reunion festivities. I promise you that I shall be present at the end of the next twenty-five years.----"

Geo. W. Peavy

"One of the Old-Timers kindles a signal fire on the western slope and extends a hand across the distance and the years, in greeting.

"Mostly, mine were Div. 'R', G. L. O. days. Days of Roosevelt's dynamic urge at the source; of Roth's push in the office; of pull by politicians and their cohorts in the field. Hirelings, knaves and thieves in part; a few valiant Shinn's and his like quarrying for the foundation.---- Days when an inspector in the field was a law unto himself, and its interpreter; when regulations were drafted at tonight's campfire for tomorrow's need - not extracted from a book of rules, a manual of arms, or what have you; carrying to remote places the story of the new salvation; hiring and firing - selling forestry and Pinchot to the West.

"Gone is the old bell mare, and the 'Langille hitch' is forgotten. Snow brush covers the trails and the rangers ride to battle with four wheel brakes. Airplanes. Fire engines. Telephones without wires, and radio. Symbolic language conserves the forests! The boys are doing great work.

"Twenty-five years has set the Old-Timer 'way, 'way back, but he's glad to be remembered. Call him again at your fiftieth and he'll come in the flesh. He is with you in spirit now.----"

H. D. Langille.

"Them were the days. I don't believe any bunch of young men ever had more fun than we did with a hundred million acres of land to play with. Some of us are getting old now and things look pretty tame, comparatively, but I am always glad that I can look back to the adventure and thrill of those days of unlimited possibilities in a virgin field.-------"

Elers Koch.

"---As I look back over the space of thirty years I see many changes and on the whole a decidedly forward movement in forestry matters in this country. I think that American foresters can look with a fair degree of satisfaction on the general trend of American forestry.------"

J. W. Toumey,

"I most certainly was on the active roll of the Bureau of Forestry February 1, 1905. ----- My official connection with the Forest Service began on February 4, 1901, in the good old Student Assistant days, and it would give me a very great deal of pleasure to foregather next February 1 with all the old grey heads and bald heads, if I could possibly do so. I have some very clear recollections of the exhilarating days which followed the assembling of the American Forest Congress in Washington January 2-6, 1905.----"

R. S. Kellogg.

"Distance prevents me from personal participation in the twenty-fifth anniversary celebration in Washington.

"My thoughts, however, find no such barrier and I assure you that I am present in spirit.

"Best greetings to you and the other participants. May the Forest Service prosper and unflinchingly in the future stick to the same high principles and objectives that marked its course during its first quarter century.------"

Paul D. Kelleter.

"The date February 1, 1905, must always remain a red letter day in the annals of forestry in the United States, in that it marked the real beginning of modern forest management on the National Forests.----"

"It did not take long to bring about significant changes. The decentralization of the work through the creation of the Districts, the rapid building up of a trained personnel, and the expansion of the uses of the National Forests.---"

"On this anniversary, as one who rejoices that he belongs to the band of 'Forest Service Alumni,' I send to the officers and members of the Forest Service, of former years and of today, my cordial greetings and heartiest felicitations.----"

Ralph S. Hosmer

"It would be, indeed a great pleasure to see Governor Pinchot and all the others who meant so much to us in those first years, in instilling into us right and lasting concepts about the nation's resources and their intimate bearing upon human welfare.——"

"Let me repeat here what I stated on the occasion of the transfer twenty-five years ago, and have continually reiterated through the years which have followed: 'The Forest Service, with necessary modifications in policies from time to time to meet changing conditions and needs, is here to stay: and generations, yet unborn, are going to reap the benefits of its timeliness. ——"

John H. Hatton

"It is a rare privilege to congratulate the Forest Service on its twenty-fifth anniversary. In these twenty-five years the Service has made a notable contribution to our national life. Upon the foundation which has been laid there must be continuous building in the next twenty-five years and in succeeding years in order that our nation may go on in its social and industrial growth. While I cannot be with you, I have sincere pleasure in sending you this word of congratulation and encouragement.——"

Wm. L. Hall.

"The thing which I naturally most prize as a legacy from the years spent in the Forest Service is the friendships formed during this period. Forest Service work has always attracted a fine lot of men and women, and these men and women are responsible for the high standards which have always been maintained in Forest Service activities.

"As one of the early group of Forest Service men who struggled with the problems of that time, I wish to send best wishes to all those who gather in Washington, February 1st, to celebrate the 25th anniversary of the organization.——"

C. S. Chapman

"The Forest Service and its welfare have been of greater concern to me than any other phase of forestry. My actual connection with the Service was brief, comprising about eighteen months as Forest Assistant and two and one-half years as Chief of Forest Management in District 3. I have contributed to the best of my ability in other ways. First, by being instrumental in securing the passage of the Morris Law in 1902 which set the precedent for management by the Forest Service of public forests and paved the way for the transfer of the National Forests in 1905. Second, by endeavoring to inculcate in the minds of the graduates of Yale who enter the Service the ideals and goals of that organization.

"I have been aware for many years of conflicting tendencies in the Service organization. The urge for efficiency necessary in the development of the Service is sought in two directions: One, to continue and improve the spirit of loyalty, devotion, enthusiasm and idealism which goes with self respect and a certain elasticity in action. The second is securing this efficiency by routine methods, by plans imposed from above, by tightening up on rigid discipline and in other ways by an effort to secure conformity to standards set in the Washington office.

"Certainly both of these tendencies are beneficial but the Service has a real problem in holding them in proper balance. It is my distinct belief based upon continued observation over the entire history of the Service that they are not being held in balance and that the spirit of autocratic discipline has made such inroads, especially of late, upon the more vital essence of efficiency that a very serious condition has arisen which does not promise to correct itself.

"This is the message which I wish to give on this twenty-fifth anniversary of the founding of the Forest Service."

H. H. Chapman

TELEGRAPHIC REPORTS FROM DISTRICTS ON CELEBRATION

"Silver anniversary party held eve of anniversary. About 200 members and former members attended in costumes of 1905, or portraying some Forest Service activity. Dances and music old and new were enjoyed throughout evening, after appropriate speeches. Huge white birthday cake decorated with green shield, trees, and twenty-five candles was cut and served with punch. Speech by Thieme presenting Major Kelley with ten gallon hat to replace derby brought from banks of Potomac. During grand march, committee selected costume prize winners as follows: John McLaren as Ranger 1905; Misses Mathilde and Eva Ammen as cut-over areas of 1905 and artificial reforestation of today, respectively; Mrs. James Boyers representing over-grazed areas 1905 and regulated grazing 1930; Mrs. John Keach typical costume 1905. James Brooks appeared in clothes he wore 25 years ago. Just before midnight Major Kelley requested party to remain a brief period silent in respect to memory of Major Fenn. Carnival idea carried out in gambling games, photograph gallery in museum, hot dog stand and movie show, clever cartoons contrasting 1905 and 1930 were feature of movie show; skit about Ranger Days Now and Then presented by Mrs. Glen Smith and troupe of Ranger proteges."
– District 1.

– – – – –

"District personnel received broadcasting Washington program through radio set up in office, followed by meeting Society American Foresters section. Banquet in evening attended by 93 members Service and families. Addresses by Riley, Hatton, Kreutzer, and Mrs. Chipley. Stuart's letter and letters from other old-timers read. Pictures shown of members and former members." – District 2

– – – – –

"The entire District office force, the Manzano, and three visiting Supervisors assembled in front hall Saturday morning to hear the veterans relate their experiences. District Forester Pooler talked on a quarter century of forestry. He contrasted the Forest Ranger of 1905 and 1930 and the many changes which have taken place in Forest administration. Eleven others spoke in a serious or semi-serious vein on many phases of the Forest Service work. The other talks were "Regulated and Unregulated Ranges" by John Kerr, "Service Women" by M. Uva Pirkey, "Our Personnel" by Hugh Calkins, "Roads and Trails" by James Mullen, "Squatters and Homesteaders" by Cora Cook, "A Supervisor's Diary" by John Adams, "Our Veterans" by Quincy Craft, "The Docket" by Edwin French, "Geodetic Meanderings" by Curry Long, "Checks and Balances" by Albert Morris. John D. Jones acted as toastmaster."
– District 3.

– – – – –

"Field and District office personnel gathered in groups at private radios. Reception fine in Ogden." – District 4.

– – – – –

"Radio set up in District office and all employees assembled to listen in Washington broadcast. Good reception here. Supervisors advised time and stations offering broadcast."
– District 5.

– – – – –

"Portland celebration confined to meeting. Entire District office force heard Washington office broadcast from twelve to one. Six to eight former members of Service in 1905 residing in Portland invited; five present including Allen, A. C. Shaw, Mrs. Virginia Bain."
– District 6.

– – – – –

"May I congratulate you on the success of the Anniversary program. It came into Milwaukee in fine shape and we all enjoyed it very much." – District 9.

THE BIG DAY

By C. E. Randall

When the Forest Service came twenty-five years of age on February 1 the whole country was let in on the birthday party.

The feature of the anniversary was the afternoon exercises held at the auditorium of the New National Museum in Washington. For one hour the proceedings at this meeting went on the air over a coast to coast radio network of thirty stations furnished by the National Broadcasting Company. The meeting was attended to the capacity of the hall by members of the Forest Service and friends in Washington, and in a number of field offices members of the field force were able to attend by tuning in on their local stations.

Three of the four Chief Foresters who have guided the Forest Service through its first quarter century were on hand, and a spirited message from Bill Greeley, the only absent Forester, showed that he was with us in spirit. A flood of other messages from friends of the Service throughout the country poured into Washington offering birthday congratulations.

Chief Forester Stuart presided at the anniversary exercises and opened the speaking program with a brief but forceful address in which he reviewed the high points of forestry progress in the last twenty-five years. Assistant Secretary of Agriculture R. W. Dunlap conveyed the greetings of the Department and called attention to the kinship between forestry and agriculture. Other speakers included Senator McNary of Oregon, Chairman of the Senate Committee on Agricultural Forestry; Representative John D. Clarke of New York, one of forestry's liveliest advocates in Congress; Representative Roy O. Woodruff of Michigan; Harry L. Englebright of California; and former Chief Forester Henry S. Graves. Representative Scott Leavitt of Montana paid high tribute to the members of the Forest Service and showed himself still as ardent a worker for forestry as he was in the days when he rode the range. A stirring plea to destroy forest destruction in the United States was made by the first Chief Forester, Gifford Pinchot. Many a lusty pat on the back was given the Forest Service during the speeches.

Prior to the speaking program pictures of historic interest were thrown on the screen. Explanations by Assistant Forester E. E. Carter were given with the pictures. A series of cartoons by Viggo Christenson of District 1, humorously featuring the "then and now" idea brought many a laugh when they were thrown on the screen. The old-time pictures called up stirring memories to veteran foresters, and younger members of the Service saw how such pioneer workers as Major Stuart, Sherman, Kneipp, Greeley, Graves, Pinchot, Zon, Carter, Clapp, Peck, Ames, and others looked a quarter century ago. To show how times have changed, Carter flashed a few scenes of present-day forest activities.

Music was furnished at the anniversary exercises by the United States Army Band Orchestra.

THE BIG NIGHT

By C. F. Hunn

The birthday celebration that was begun so auspiciously by the program at the New National Museum on the afternoon of February 1, received fresh impetus when the Forest Service family and their guests gathered at Pierce Hall the same evening for a reception and dance. The hall had been virtually made over for the occasion through the efforts of Mr Witherow's Committee on Design and Decorations. Small pines and cedars provided by Mr. Buckman of Drafting from his place in Virginia, stood at intervals along the walls, decorated with colored lights. Above, bunting draped the walls and formed a setting for large green and gold plaques bearing announcement of the occasion. At the ends of the hall ferns and palms were massed most effectively. Perhaps the greatest praise for the decorations should be awarded to the illuminated birthday-candle design in green and silver, executed by the Office of Drafting, and the floral decorations provided and arranged through the cooperation of Messrs. Byrnes and Keller of the Bureau of Plant Industry.

In the receiving line were Major Stuart, Assistant Secretary of Agriculture Dunlap and Mrs. Dunlap, Gov. Pinchot, Col. Graves, Congressman Leavitt and Mrs. Leavitt, and Congressman Englebright and Mrs. Englebright, and Mrs. E. A. Sherman.

The Committee on Arrangements had reason to be greatly gratified at the large attendance, which taxed the capacity of the hall. One of the most attractive features of the evening was the "balloon ascension." Some 250 small silver balloons were presented to the guests during the grand march at 10:30 and created a beautiful effect for the rest of the evening as they floated in and out through the throng, contrasting with the colorful costumes of the dancers. A souvenir of the occasion was also presented to each guest in the shape of a small 3-inch tree section stamped with the shield of the Forest Service and bearing the dates 1905 - 1930. The color scheme of forest green was carried out even in the refreshments, the ice cream being served in blocks of green and white.

Unquestionably one of the factors that contributed most to the general enjoyment of the guests was the great care with which all arrangements for the party had been executed. As at the afternoon meeting, all details fitted perfectly, without stress or friction, into the general scheme. For this much credit is due to the general committee - Mr. Sherman and Mr. Irion - and to the chairmen and members of the many subcommittees on whose faithful cooperation they relied.

COMMITTEES IN CHARGE OF CELEBRATION

General Committee on Arrangements
- E. A. Sherman, Chairman
- Harry Irion, Vice-Chairman

Invitation Committee
- G. G. Anderson, Chairman
- C. F. Hunn

Reception-Dance Committee
- C. M. Ballard, Chairman
- Mrs. Edna F. Crocker
- Miss Lena A. Daniel
- R. M. Evans

Committee on Sale of Tickets
- R. K. Helphenstine, Chairman
- Miss Mary M. Murphy
- Miss Berniece Dirrim
- Mrs. Jennie R. Snyder
- Miss Ella M. Nugent
- Mrs. Helen S. Foley
- Mrs. Zula F. Pence
- Miss Beryl G. Gardner
- Mrs. Orrell B. Chamberlin

Committee on Historical Pictures
- J. A. Fitzwater, Chairman
- H. N. Wheeler
- E. S. Shipp

Committee on Design and Decorations
- John M. Witherow, Chairman
- Mrs. Edna F. Crocker
- Charles L. Taylor
- L. H. Buckner
- Miss Francene E. Sizer
- Robert E. Lee
- Mrs. Nellie W. Brenizer
- Warren D. Brush
- John Saunders

Publicity Committee
- Herbert A. Smith, Chairman
- Charles E. Randall
- Ward Shepard

Committee on Early Personnel Records
- G. G. Anderson, Chairman
- Miss Blanche A. Judson

THE NEXT TWENTY-FIVE YEARS

By R. Y. Stuart

The groundwork for forestry has been laid. We can not claim more.

In retrospect we see the National Forest system well entrenched with a steady advance in the protection, administration, and development of the National Forests and yet markedly lacking in capital investments and in their influence upon the general forest situation. We see State forest organizations functioning in practically all forested States grappling with the fundamental needs of the State forest requirements. We see private owners of forest lands increasingly conscious of the exhaustibility of the forest resources but for the most part indifferent or claiming impotence, without public assistance, in applying necessary safeguards against destructive forest practices. We see the acreage of non-productive forest lands increasing and augmented by an expanding acreage of marginal and submarginal agricultural lands with forest potentialities. We see the general public slowly responsive to the urge for more and better forest practice.

Forest administration and protection will undergo a severe test in the next 25 years. So will professional foresters. Notwithstanding the marked advance steps taken in National and State forest organization, in organized forest protection and comprehensive plans for forest research, and in the cooperative relationships between public and private agencies for the promotion of forestry, nothing short of a decided trend toward balancing the forest budget of the nation will satisfy the public need and expectation. It is inconceivable that as a nation we progressively accumulate extensive areas of non-productive land. It is also inconceivable that we shall continue ruining land productivity by abusive forest practices over extensive areas.

As we enter the second cycle of organized public forestry, foresters face the test not only of efficient administration and protection of public properties but also of the success with which they cope with the curtailment of land spoliation through abusive forest practices.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

VOL. XIV No. 8 WASHINGTON, D. C. FEBRUARY 24, 1930

INVOCATION BY DR. EDWARD EVERETT HALE,

Chaplain of the United States Senate,

CONFERENCE OF GOVERNORS.

May 13-15, 1908

"The Lord thy God bringeth thee into a good land, a land of brooks of water, of fountains and springs, flowing forth in valleys and hills, a land of wheat and barley and vines and fig trees and pomegranates, a land of olive trees and honey, a land wherein thou shalt eat bread without scarceness. Thou shalt not lack anything in it - a land where stones are iron and out of whose hills thou mayest dig copper.

"Beware lest when thou hast eaten and art full, thou forget the Lord thy God.

"Thine eyes shall behold a land that reacheth afar, a place of broad rivers and streams. Yea, thy children shall possess the nations and make the desolate spots to be inhabited.

"So they helped everyone his neighbor and everyone said to his brother, 'Be of good courage.' So the carpenter encouraged the goldsmith and he that smoteth with the hammer him that smote the anvil.

"'Bear ye one another's burdens,' and so fulfill the law of Christ.

"Let us pray.

"Father, for this we have come together. Thou hast made for us the paradise through which these rivers flow. Now give us the strength of Thy Holy Spirit that we may go into this garden of Thine and bring forth fruit in Thy service. Thou hast revealed these to us to use under Thy guidance. We are children of the living God, alive with Thy life, inspirited with Thy Holy Spirit. The harvest field is ready and Thou art pleased to send us into the harvest. Be with us now in our assemblage. Thy servants have come from the North and from the South, from the East and from the West. It is our God's land. Thy oceans send their mists into our mountains; Thy streams descend into our valleys; and Thou hast chosen us that we may be now the ministers of Thy will and enter into that harvest field.

"Bless us now in to-day's service and those that are to follow, and may Thy servants return to their homes, alive in that light, clad in the Holy Spirit, willing to enter into Thy work and to go about our Father's business.'"

OUTSTANDING ACCOMPLISHMENTS - 1929

RESEARCH

By E. H. Clapp

The McSweeney-McNary Act has made possible, for the first time, comprehensive appropriation increases for research. This is particularly significant for Economics, where except for studies of forest taxation and insurance no specific appropriation had been made. Included is the initial appropriation for the Forest Survey, one of the most important projects ever undertaken by the Forest Service. It was conceived by Colonel Graves when Forester, and has been repeatedly and urgently recommended since. This initial appropriation, the selection of Granger to have charge, and the progress in organization and inauguration of the work indeed constitute an accomplishment.

Important new or enlarged work is provided by the increases for the financial aspects of forestry and for naval stores work in the South; for conversion of aspen-birch-scrub oak stands and for yields in white and Norway pine in the Lake States; for range use and improvement of forage stands and for the influences of grazing on timber and watershed protection in the Intermountain Region; for erosion in five regions; for pulp and paper from southern pines, a soda lime base in pulping, lumber and storage methods by the laboratory; for logging and milling in California; and for forest insurance. The critical problems of personnel selection involved in these increases have largely been solved.

Further progress has been made in extending the regional principle of organization, particularly to forest economics, through the inauguration of intensive projects in this field by the Pacific Northwest, the Lake States, and the Southern Stations. The principle of regional coordination has been extended further with reference to related work of other bureaus, through additional assignments of 2 biologists, 2 pathologists, and 1 entomologist in cooperation with the stations.

The annual Program Conference at Madison has been expanded to include representation from the Stations and the Districts. Increased emphasis has been given to systematic contacts and exchange of thought between Research units, and between Research and Administration in the selection of projects and formulation of programs.

Publication is an indicator of accomplishment in research. During the past year there have been published 27 technical bulletins and circulars, 126 trade journal articles, 35 technical journal articles, and more than 150 miscellaneous leaflets, addresses, multigraph reports, etc.

It is impossible within the limitations of this statement to mention all important results of Branch endeavor. The following are typical.

SILVICS

Continued progress has been made in the fire studies under way at several stations. These vary from straight statistical studies of past fires to studies of fire behavior. Snag felling machines are being tested and developed. The possibility of using chemicals to destroy vegetation on fire-breaks is being tried. Evidence continues to point to the importance of relative humidity as a factor in fire control, especially through its effect upon the rate of drying of the forest fuels. The moisture content of hardwood litter follows closely changes in atmospheric moisture. The value of the lightning storm study on the western forests is being shown. In the Northern Rocky Mountain region lightning from storms that bring moisture starts as many fires as lightning from the dry storms. The relationship between the type of forest cover and the degree of fire hazard has been worked out for California, and Lake States work is indicating a relationship between methods of cutting and the degree of fire hazard.

Instead of being confined to moist sites, slash pine apparently can be planted on nearly every kind of site in the southern coastal plain region. The possibilities of reforestation in the Lake States have been made the subject of a special report covering all phases of planting. A similar study is under way for the Central States region where forest planting has had a large part to play in the economy of farm management.

Cutting studies in progress in many regions are showing the need for changes in our silvicultural management. In Douglas fir, seed trees in strips insure reproduction that may not develop from stored seed. Seed of Douglas fir is carried long distances by wind. Seed seems to be released not only in the fall but at other periods as the cones slowly open. It appears that burned areas, owing to higher soil temperatures, are not good seed beds.

Volume tables for second growth have been completed for species associated with the upland oaks, and for the Lake States northern white pine and Norway pine.

Critical examination of log rules has indicated the possibility of a new rule which gives values exceedingly close to those actually obtained in cutting. Strangely enough, these results apply equally well to milling of 20 years ago as they do to the modern types of mill.

The results of the naval stores research have been so conclusive that manufacturers of tools are no longer making the large hacks but are pushing sales of the smallest hack now on the market. A new type of tool for use in wounding the trees has been developed which permits using an adaptation of the desirable French face.

Limitations of space prevent more than mention of work on many other lines of effort which tie into forestry practices throughout the United States, as on slash disposal, cutting methods, reproduction, erosion control, growth and yield, fire control, tree breeding, seed storage, and farm woodlot management.

FOREST PRODUCTS

The Forest Products Laboratory carried out a series of commercial tests on the preservative treatment of Engelmann spruce railroad ties which demonstrated that this wood can be satisfactorily treated; a troublesome problem in National Forest management. Investigations on the bracing in construction of farm buildings have shown that a few properly placed diagonal braces will largely obviate the trouble experienced with leaning buildings, sway-backed roofs, or blown-down buildings.

Logging and milling studies have been carried out by the Forest Products Laboratory and the Appalachian Forest Experiment Station in the Appalachian hardwoods. The field work for two similar studies was completed in California by the California Forest Experiment Station and in the Inland Empire under the direction of the Office of Products in District 1. A comprehensive report on a logging and milling study conducted by Products in District 6 in 1928 was published.

Further substantial progress was made in bringing about the introduction of moisture specifications in lumber grades. A study of the results of the adoption in 1928 of commercial moisture specifications for southern pine lumber showed that better moisture conditions in lumber shipments prevailed than before, although conditions are still unsatisfactory in many shipments. A process was developed for pulping black and tupelo gum so as to yield a pulp of a blue-white color particularly desirable for book paper. The fire tube test for measuring the fire resistance of wood was developed. This gives much more reliable results than it is possible to obtain by other methods.

The results of a nation-wide air seasoning study were brought together in a comprehensive bulletin. A good start was made in the study of little-used species by the publication of a bulletin discussing the possible uses of western hemlock based on its properties. Considerable progress was made on similar bulletins dealing with white fir and with western larch. It was shown that the outstanding properties of wood affecting paint service are density and texture, the denser and coarser-textured woods being comparatively difficult to keep painted satisfactorily. The large amount of information on the gluing of wood resulting from years of research was brought together and published in a comprehensive bulletin.

RANGE RESEARCH

Artificial reseeding investigations on foothill ranges of Utah developed additional promising native species, both local and from similar climatic and growth conditions elsewhere. Definite correlations between rainfall and forage maintenance and improvement were developed in Arizona which point out more satisfactory grazing adjustments to meet the unusual climatic conditions.

On semi-desert ranges of New Mexico, studies show that black grama suffers severely from too close and too frequent summer utilization. In tobosa grass, close, frequent clipping stimulates spread by root stocks and increases forage production, emphasizing the importance of its full use during summer, reserving the black grama type for winter. Studies in the sandhill type show a natural successional development. Annual weeds and grasses, gradually occupy wind-swept spaces between the mesquite clumps. Perennial herbs come into mesquite clumps and where the annuals obstruct wind erosion and bind the sand. Each successional stage decreases sand movement and prepares the soil for the next higher stage. Finally sand grasses, followed by black grama capture the area from mesquite and the sandhills pass. Thus, almost worthless range requiring 500 acres for a cow a year is transformed to one requiring 35 or 40 acres. Such studies aid in speeding up restoration.

On alpine clay soils in Utah, analyses show improved soil, greater conservation of rainfall, and reduction in sediment eroded under fall grazing compared to total protection. On the Boise River watershed in Idaho the fertile layer is largely gone, exposing granitic soil which, when protected by only a thin stand of vegetation, erodes seriously. Conditions will get worse unless forage and soil values can be restored rapidly. On the Salt River watershed vegetation recovering from a depleted condition is better maintained where vegetative cover has materially improved soil conditions.

In the western yellow pine type in Arizona injury to timber reproduction may be great where range is overgrazed. Some damage, however, occurs when abundant dry forage is available, apparently from lack of succulent forage or water.

Interest in range research has grown materially in the last year. A very significant group of stockmen attended the Great Basin Field Day last summer. Western Extension Service personnel showed keen interest in the Jornada investigations. The American Society for Animal Production and the Ecological Society of America held symposia on research methods applicable to range conditions.

FOREST ECONOMICS

As one step in the present and prospective requirements phase of the Forest Survey, a canvass of wood requirements by wood-using industries for 1928 was conducted with cooperation from the Census, the National Lumber Manufacturers' Association, and the Laboratory. The whole canvass, with difficult problems of organization, preparation of lists, editing, compilation, etc., was completed in record time under the direction of Brush and Reynolds.

Progress has been made in the definition of problems of forestry in relation to submarginal agricultural land, and emphasis and cooperative advice given to land economic studies in general. Sparhawk's article "Forestry and Farm Relief", in the United States Banker, was a significant stimulus to constructive thought and action. Cooperative assistance was given in outlining a plan for an agricultural survey of Georgia, and for a social-economic study of the Southern Appalachian Region, each to involve possibly $200,000. Assistance was given in considering a land economic study in California. The cooperative land economic study for West Virginia was completed.

The lumber distribution and consumption study for 1928 was completed. For the first time, through cooperation with the Canadian Bureau of Statistics, this included our exports and imports to and from the Canadian Provinces. A vast volume and range of statistical information was furnished to other Forest Service units and to the public, an important time-consuming but unspectacular activity.

The Forest Taxation investigation is still in the fact-finding and analysis stages. The fourth and fifth Progress Reports were issued. One was a brief history of tax legislation, giving a digest of State forest taxation laws. This proved to be very valuable for a variety of agencies. The other was a presentation of forest and taxation conditions for the forest counties of Minnesota.

A large amount of information on Grays Harbor County, Washington, was made available to E. T. Allen, for incorporation in his cooperative economic study of that important lumber region. Many statistical data resulting from the field study in New Hampshire were made available to appropriate State authorities. Cooperative relations have been initiated with such States as North Carolina and Georgia.

FOREST MANAGEMENT

By E. E. Carter

The outstanding accomplishments within the field of activity of the Branch of Forest Management during the calendar year 1929 are as follows:

1. Timber sale receipts were the largest in the history of the Service, amounting to $4,274,900. This was a gain of a little over $600,000 compared with the timber sale receipts for the previous calendar year. It is prehaps noteworthy that the gain was distributed throughout the year, each quarter showing some increase when compared with the corresponding quarter of the previous calendar year. The very sharp increase in receipts in District 7 was especially noteworthy. These increases in receipts came without violation of the general policy of the Service not to press timber on the market, but represented chiefly response to urgent applications during recent years for the purchase of timber to supply established industries and to stabilize the communities dependent on those industries.

2. The application of fundamental policies in the handling of the timber resources of the National Forests, especially the policy of sustained yield, was strengthened by the action taken in connection with several cases, especially the offering of 852,000,000 board feet of timber on the Satsop Unit, Olympic National Forest, Washington, under conditions of sale which restrict the cut to the sustained yield of the working circle of which

the sale area forms a part. Competitive bids for this unit were submitted, in spite of this restrictive condition of sale, and the highest bidder offered considerably higher prices than those at which the timber had been appraised and advertised. This case and others are strongly illustrative of the practicability of the sustained principle and its acceptance by large lumber companies as a feature of the use of National Forest timber.

3. A distinct gain was made during the year in the use of the tree measurement procedure in handling small sales. Under this procedure the volume of the timber sold, and consequently the amount of money paid the United States, is determined at the time the trees are marked for cutting, instead of being determined by scaling the logs after they are cut. Where conditions permit its use both silvicultural and business standards are maintained, with distinct gain in the elasticity of time of the Forest officers who handle the sales and, at least in some regions, with distinct saving in the total time required to handle a sale of a given size and thus a saving in unit costs.

4. Actual logging operations began on the large timber sale on the Malheur Forest, which sale has been a matter of interest to the entire Forest Service ever since 1923. Good progress was made, but at the cost of the life of Ranger Thayer, in the cruising work necessary for the definition of the areas of the large pulp sales in Alaska, which for the last two years have been in the status of conditional awards.

5. The enlarged planting program made possible by the increase in planting appropriations for the fiscal years 1929 and 1930 was pushed forward with gratifying promptness. The program of nursery site purchases authorized by a special Act of Congress was carried out. A decree for the condemnation of the last of these areas was obtained just before the end of the calendar year. Other sites were purchased without condemnation and are being developed. In addition, satisfactory arrangements were made for the establishment of a small nursery in the vicinity of the Ozark National Forest in Arkansas and development work at other nurseries was pushed. Figures are not yet available to enable comparison to be made between the acreage planted in the calendar year 1929 with that for the previous year, but the acreage was probably about the same. It will be another two years before the full effects of the nursery enlargements and increased appropriations are reflected in increased acreages planted.

6. Definitely encouraging results were obtained in various insect control projects. The further development of the method of spraying infected lodgepole pines with oil, setting fire to the oil-soaked stems of the trees and killing the beetles in and immediately under the bark by the heat so generated was an outstanding accomplishment by the personnel of the Intermountain District. This method, commonly referred to as the "burning standing" method, was not fully perfected, but was demonstrated to be practicable and economical. On the Targhee National Forest, for example, its use on about 40,000 infested trees was sufficiently successful to bring about a marked reduction in the infestation on the areas treated and thus prevented the infestation from getting completely out of bounds.

(We'll tell about the accomplishments of the other Branches in next week's issue. - Ed.)

ANOTHER POTENTIAL NATIONAL FOREST

By L. F. Kneipp, Washington

The first of several proposed purchase units in the State of Mississippi has been recommended by District 7. It is the Homochitto unit, an area of 250 000 acres situated largely on the watershed of the same name which is an important tributary of the Mississippi River. The area is of outstanding value for timber production, shortleaf pine being the principal species, and within its borders a number of extensive logging operations are still in progress. One or two of the large operators have been converted to a rough program of selective logging under which the cut-over land is left in much better condition for future production than had previously been the case. Upon some of the areas cut over in earlier years a very satisfactory natural replacement has occurred, so that in the event of the acquisition of the lands by the United States the early initiation of good forestry practice will be feasible.

On the western edge of the proposed unit some 25 miles or so east of the old city of Natches is the Courtland Plantation, one of the famous plantations of ante-bellum days. One of its interesting features is the old slave quarters which are still fairly well preserved, but to the forester a much more interesting feature is the stand of what apparently is absolutely virgin shortleaf pine growing upon fields that were cultivated as late as 1867. During his investigation the examiner encountered an ancient negro who, pointing to this apparently primeval forest, stated that he as a boy had hoed cotton where the trees now stand, and throughout many expanses of apparently mature forests vestiges of the old cotton rows are still discernible.

An area of this kind is a real challenge to the true forester and offers wonderful opportunities for pointing the way to a new economic solution of the tremendous land use problem which now confronts many of the South Atlantic and Gulf States. It therefore is to be hoped that the State officials will concur in the establishment of the purchase unit, that it will receive the approval of the National Forest Reservation Commission, and that within a few short years Uncle Sam will have the nucleus of a National Forest under real silvicultural management.

YE EDITOR DISCOVERS

In anticipation of the District Forester meetings to be held in Washington in March, the Branch of Operation is showing great signs of activity. Loveridge and Pitchlynn are up to their ears in columns of figures, trying to work out what is the difference between a cow acre and a timber sale unit in the District Ranger Analyses. Frantic clerks are seen hurriedly running up and down the halls from one calculating machine to another attempting to arrive at converting factors that can be used equally well on the Tongass and on the Ocala. District Forester Rutledge, a recent arrival in Washington, has joined in the bustle and is helping to make plans and prepare material for these meetings.

- - - - - - - - -

Appropriation of $50,000,000 for the protection of the watersheds of navigable streams is proposed in the bill introduced by Representative John D. Clarke, of New York, (H. R. 5694), ordered favorably reported from the House Committee on Agriculture February 10.

The sum would be available at the rate of $5,000,000 annually during the fiscal years 1932 to 1941, inclusive, to carry out a 10-year program planned by the commission appointed for acquisition of lands to conserve the navigability of rivers.

- - - - - - - - -

Due to the presence in Washington recently of entomologists, the Office of Forest Experiment Stations held a number of group conferences for the purpose of outlining a comprehensive program of forest entomological research in the various regions. Those in attendance were: H. J. MacAloney from the Northeastern Experiment Station, Dr. S. A. Graham from Michigan, J. E. Evenden from District 1, and J. M. Miller from District 5.

One of the outstanding facts brought out by these conferences was that the control of forest insects ties in very closely with good silvicultural practices.

A preliminary draft of questions and answers on Forest Service recruiting was referred to all the Forest Schools last spring and has now been given a final review . The final draft will be ready for distribution as soon as the multigraphing can be done.

Difficulties in connection with classification and possible legislative proposals led the Forester to request District Forester Pooler to come to Washington and devote several months to the subject.

The Washington office is in the process of subscribing to the publications and pamphlets issued by the American Management Association. Pamphlets of this association have been drawn upon in supplying outside material to accompany the lessons in this winter's course on personnel management. If the Washington office succeeds in its effort to subscribe for these publications District offices also will be invited to subscribe. The American Management Association is a very live organization of executives and investigators which inquires into and reports on developments in personnel management, financial management, office practice, and other subjects of interest to managers.

Recent arrivals in the Washington office are District Foresters Show and Flory and E. I. Kotok of the California Forest Experiment Station. Mr. Show will represent the Service at the hearings on the Englebright Bill, in addition to attending the District Forester meetings. He will also devote some of his time in working with Mr. Kotok on a fire research project which will require the use of the Washington office punch card machines. Mr. Flory is here in connection with his duties as Commissioner of Agriculture for Alaska and to attend the District Forester meetings.

OUR BIG TREE DEPARTMENT

SCIENCE — PURE AND APPLIED

By C. J. Telford, Forest Products Laboratory

In the January 6 issue of the Service Bulletin C. L. Hill, showing a commendable love for the truth, is skeptical that a Kauri pine having a diameter of 23.6 feet and a height of 150 feet should contain 282,400 cubic feet of wood as reported. Nothing unusual about that. It's the burls, man!

Doubtless some Missourian will question that Hill's California tree with a mere 20-foot diameter should cut out "361,366 M feet b.m.," especially since Hill describes it as a broken topped snag anyway Such questioning merely shows that the Missourian doesn't know his California and is ingnorant of the progress Hill and his coworkers have made in utilization. Trees grow big in California and they secure this gratifying overrun by feeding sawdust to the saw as it enters the log, increasing the saw speed to secure an annealing heat and thus cement sawdust to boards. It becomes merely a matter of mathematics and sawdust to get any overrun desired. We outsiders are wondering if it is necessary to screen out the knot sawdust to raise the lumber grade.

Hill will be interested to know that Harry Tiemann failed to see that big Kauri pine because he has been absorbed in perfecting a bubble machine which can be used to indicate the dimensions and locations of knots in logs. Everyone is, of course, conversant with his previous work with bubbles. He now blows them through the log from big to small end. As the bubble film strikes a knot it is broken and fragments of the bubble adhere to the knots in the interior of the log while the rest of the film pushes through to the end of the log where an automatic photostat makes an enlarged picture of the segments. It can be seen that Harry thus has a projection on a cross-section plane of all knots. His next machine is ingenious, as it collects the bubble and rolls it flat in a plane perpendicular to the cross-section, thus showing where the knots are distributed lengthwise of the log. By blowing bubbles from the large end of the log the fragments collected are thicker and handle easier.

We trust that Hill tells us about that knotty sawdust problem.

- - - - - - - -

Dear Ed.:

There is no doubt but what California produces the world's biggest trees as well as Münchausens, but when Cary Hill, after disproving conclusively the story of the giant Kauri pine appearing in the September 23 Service Bulletin, proceeds to tell of a redwood scaling over 360 million board feet (361,366 M ft. B.M.) I am forced to "give him the dog."- J. A. Mitchell, Lake States For. Exp. Sta.

- - - - - - - -

Ye Editor of the District 5 News Letter herewith gives, bequeaths, and devises summa cum laude to one L. Hill of the California Forest Experiment Station, to have and to hold by him and his heirs forever, world without end, the magnificent, ornate plaster of Paris medal with Bull Rampant conferred upon Ye Editor at the recent annual dinner of the California Section, Society of American Foresters. Because of the discovery of a gargantuan Sequoia sempervirens in California containing 361,366,000 feet B.M., as set dorth in his article entitled "What Price Big Trees," in the Service Bulletin of January 6, 1930, Ye Editor cannot in justice longer retain this medal in the face of such distinguished and overwhelming competition .- D. 5. Bulletin, Jan. 24.

- - - - - - - -

The magnificence of your generosity, in your issue of January 24, in tendering to me, to have and to hold, your hard earned plaster medal "du Bull," perpetual symbol of the highest achievement in the most characteristic and coveted excellence of the newspaper fraternity, is beyond the powers of my un-editorial mind to acknowledge with due grace and gratitude. May I suggest, with due humility, that highest professional editorial achievement is reputed to lie in bedeviling his contributors by doing all the things which they, in their ignorance, might suppose he ought not to do, and failing in that which we suppose he is paid for. For this your medal should unquestionably rest upon the noble breast of Ye Editor of the Service Bulletin, to-wit, for letting pass to print my inadvertently overlooked surplus "M" in the board-feet contents of the California redwood, as recorded in my article "What Price Big Trees" in the Bulletin of January 6, 1930; as well as similarly letting pass his eagle editorial eye the error in the contents of the Australian tree previously published in the Bulletin. To whom, therefore, I re-bequeath and devise, etc. etc., your gorgeous medal, to have and to hold. Selah! - C. L. Hill, in D. 5 Bulletin, Jan. 31.

- - - - - - - -

The following is quoted from the Southern Lumber Journal: "When a plumber makes a mistake, he charges twice for it. When a lawyer makes a mistake, it is just what he wanted, because he has a chance to try the case all over again. When a doctor makes a mistake, he buries it. When a judge makes a mistake, it becomes the law of the land. When a preacher makes a mistake, nobody knows the difference." To which Ye Ed. adds: "But when mistakes appear in the Service Bulletin, no matter who makes them, Ye Editor is always glad to 'take the rap' as the racketeers so quaintly put it; so be not discouraged from contributing. Who are we to challenge an inadvertent M in a statement about California by one of her native sons.

And Oh, Yes - H. N. Wheeler wrote the article "Still More About Fires" in the February 3 issue of the Service Bulletin. Through an oversight his name was omitted.

"THE ROOKIE"

Not quite a year ago a young man, not yet of the voting age, became a member of the Forest Service.

As time passed swiftly on, he came more and more into contact with the men and women, (usually the men however, because he is rather shy of women) who constitute the Forest Service.

"This surely," he thought, "is somehow different from the usual Government bureau." He was welcomed with a hearty, "goodmorning," each day, and conversation was always easy and interesting with his superiors. And the Family Service Meetings were fine. Then a party was given, and shortly after came the annual Christmas party. In the meantime he had been given a promotion.

Finally the Forester gave a blanket invitation to "his family" to visit him at his home. The welcome and hospitality received there stunned the young man.

He wonders if it is all a dream. Like a mariner he can feel the fresh northwesterly breezes, as he meets the men from the Northwest or just as hearty a breeze from those of the Northeast, and the easy cheerful zephyrs from the South.

Suddenly he wakes as if from a dream and finds himself talking and acting and thoroughly enjoying his work, just as the other members of the Service. What is the meaning of it all? Then silently and powerfully dawns the truth across his mind. He too has succumbed to the spirit - "The Spirit of Service." G. B.

DEATH OF M. E. FAGAN

On Tuesday night, February 11, Mathias E. Fagan, for years associated with the Forest Service, died at his home in Washington at the age of 72. Mr. Fagan was appointed Chief of Accounts and Fiscal Agent on February 1, 1910. and served in several positions until March 15, 1927, when he was transferred to the Bureau of Entomology as special administrative and disbursing agent on the Corn Borer work. Prior to entering the Forest Service he had served in other offices of the Department between 1893 and 1910. Before his connection with the Department he had held the position of secretary to two members of Congress. He retired from active service about two years ago.

Mr. Fagan made many friends among his associates, and was well and favorably known by forest officers both in Washington and the field. - H. I. L.

$400,000 FOR PUBLICITY

The National Lumber Manufacturers Association has approved a budget of over $1,000,000 for 1930. Of this amount $111,000 will go for research, $474,000 for promotion and over $400,000 for advertising and publicity. In 1929 the N.L.M.A. used over 40,000,000 pages of advertising in 44 of the most prominent general, home, and professional magazines which carried the message of lumber into homes occupied by 30 million people. Requests for information and literature were received from 25,670. Foresters who have been trying to sell the forestry idea to the American public, for the past 25 years on the "twopence" basis, will find food for some serious thought in these figures. - D. 5 Bulletin.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. • • • Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

Vol. XIV, No. 9 Washington, D. C. March 3, 1930.

OUTSTANDING ACCOMPLISHMENTS - 1929

OPERATION

By Roy Headley

If I say that one trouble with the outstanding accomplishments in the field of Operation is that they do not stand out, some unsympathetic soul will say, between peals of raucous laughter, "Well he is honest anyway."

But it's true, although not in the way said unsympathetic soul would interpret such a statement. There have been few years which I could review with so much of a sense of headway made as 1929, but when expressed in tons, cords, millions of feet, or acres the record by and large is not striking.

For example, figured in the way we report our fire losses to the Bureau of the Budget, the curve of our area burned has stopped going down and has started up - for the first time since 1909. But actually, fire control on the National Forests was never so strong as today. In few years have we gone so far in following up words about fire control with action. There is an increasing realization of the fact that the dominant factor in fire control is "management" and an increasing mastery of this factor.

The year of 1929 has witnessed a greatly increased recognition by high Governmental authorities of the need for more protection funds. An increase in one year of $1,843,450 in the protective improvement appropriation is an accomplishment worth writing home about.

Experience, experiment, good straight thinking, and heavy machinery have radically changed our conception of protection roads. Because of this accomplishment we are now able to buy far more protection for a given sum of road money than ever before. Even more important perhaps is another one of those invisible accomplishments. I believe that we have made great headway in the will to do our protection road work in the way experience and straight thinking have indicated.

No list of 1929 protection accomplishments should omit the creation of Mr. Norcross's method of tying in road and trail plans to hour control, to personnel in first and second lines of defense, to road cost and to road speed. Many of us have struggled vaguely for years and years with the problem for which Mr. Norcross has provided a method of solution.

There will be no general agreement as to whether job analysis as an accomplishment should be preceded by a plus or a minus sign. We are sold to the application of scientific method in biology and engineering but when some one starts asking how and what and why and when of administration and starts formulating and testing hypotheses, the apparent result is sure to be strongly impregnated with emotion and controversy. All will agree that 1929 has seen a lot of systematic inquiry, a lot of hard work applied to finding out just what we want to accomplish, what ways of working are best and what is appropriate under the headings of perspective and coordination in the way time and energy are invested between our numerous activities.

All would agree, no doubt, that job analysis is forcing us to reach out into unfamiliar ways of thinking about all our work.

Not all would agree with me that job analysis has now become a tool of management which enables us to think with a degree of accuracy and act with a degree of intelligence which was not possible when we relied on whatever we relied upon before we got into the modern game of job analysis.

We have completed the third year of a five or six year program of study and development of our organization by means of job analysis.

During the year we have got further into the analysis of supervisory jobs, as planned. One concrete accomplishment is that for the first time in the history of the Service we have undertaken to use systematic analysis of a Supervisor's job in determining the education, experience, and personal qualifications required for that job.

Perhaps my greatest feeling of accomplishment for 1929 is on account of our advance in training. It doesn't stand out, to be sure, and it is so intangible and many-sided that we have not attempted seriously to measure the end effects of training. Perhaps my satisfaction is largely a reflection of my feeling as to my own growth during the year and the increase in my personal equipment for working through the situations which confront the man in my particular job

We have conducted the usual training camps and correspondence and discussion courses - with more understanding and effectiveness than ever before, I believe We have largely increased our fruitful contacts with the men in the outside world who are exploring the field of organizing and directing human effort. Job analysis has contributed heavily to the training of all of us for the performance of our various jobs. We completed one all-Service course in Executive Management during the year and have done something by way of follow-up action. Under Mr. Keplinger's astute leadership we have prepared and launched our all-Service course on Personnel Management which most of us believe will bring us a large measure of growth and skill individually and as an organization dedicated to public service.

"FOREST FIRE AND OTHER VERSE"

The new collection of forest verses "Forest Fire and Other Verse," by John D. Guthrie gives a vivid insight into the lives and work of the forest ranger, the fire lookout, the smoke chaser, and the forester. In this volume of verse these men speak out for themselves, and, as verses by men from all parts of the United States and Canada are included, the reader obtains a pretty complete picture of their lives and work. Mr. Guthrie is to be congratulated on collecting into a single volume such a wealth of material on the life and work of these men.

The book contains verses by some 150 authors. It is clothbound, with colored frontispiece and a foreword by Will C. Barnes. It is printed by the Dunham Printing Company, 116 Second Street, Portland, Oregon.

LANDS

By L. F. Kneipp

The development of greatest importance during the year 1929 in the Branch of Lands was the enactment by Congress of a law prohibiting the further selection of National Forest lands by the Northern Pacific Railroad Company in satisfaction of alleged deficiencies in its grant. This obviates a possible loss of 2-1/2 million acres of National Forest land in Districts One and Six.

The development of next importance probably was the appointment by the President of a Commission on the Conservation of the Public Domain. This has operated to defer action upon a number of very desirable additions to the National Forests.

Another development of outstanding importance was the definite establishment of a policy and procedure relating to research reserves and primitive areas.

Another activity of more than passing interest was the continuation of the practice of recalling the listings of lands previously classified as chiefly valuable for agriculture, but found in the light of current conditions to be more valuable for other purposes.

With these exceptions the year was one of consistent progress along established lines of policy and procedure, which with reference to each specific major activity was as follows:

A number of desirable additions to National Forests were covered by field studies and reports. At the close of the year twenty-two bills involving fifteen separate projects were pending in Congress. Interdepartmental agreement that action upon projects involving the public domain be deferred until the Commission on the Conservation of the Public Domain had submitted its findings and recommendations, has caused postponement of action on these projects, except the one involving important additions to the Boise National Forest which is recognized as an urgent and especial case.

In land exchange work steady progress was made both in planning and in the procurement of better data. Tentative agreements for exchanges with the States of Florida and Colorado were developed, progress was made in consummating the exchange with the State of Montana, and a great deal of educational work was conducted in New Mexico where an exchange will require a constitutional amendment. If the 156 exchanges approved by the Secretary of Agriculture during the year are all consummated, the United States will acquire 129,418 acres of land in exchange for 43,115 acres of forest land and timber valued at $244,141, thus increasing the net National Forest acreage by 86,303 acres, of which practically all is good timber productive land, much of it supporting stumpage which in time will be worth considerably more than the stumpage granted in exchange therefor.

In the acquisition work the most important developments were (1) the approval by the Commission of an enlarged purchase program and fiscal policy, (2) the introduction in Congress by Senator McNary and Representative Clarke of identical bills authorizing appropriations of $5,000,000 per year for the period from 1932 to 1941, and (3) the approval by the Commission of the Ocala, Choctawhatchee and Osceola Purchase Units in Florida. Additional units in Florida, Louisiana, and Mississippi were examined and defined but have not yet received approval by the Commission.

During the calendar year 1929 the Commission approved the purchase of 438,173 acres of land at an average price of $3.92 per acre, or a total of $1,718,890. This is the largest acreage ever approved in any single year. By the close of the calendar year the appropriation was obligated to within $20,000 of the total amount, with a large amount of pending business which would not be handled because of lack of funds.

Specific data as to the extent of recreational use during 1929 are not yet available but it probably increased proportionately to other years. General progress is reported in both planning and development and a gratifying number of special project plans were completed. Comment was made as to the tendency of the public to more and more patronize the better type of pay camp, thus minimizing the demand upon National Forest campgrounds. A gratifying increase in the cooperation of other public agencies in campground and recreation development is reported by District Five, but elsewhere no progress was made in securing more cooperation.

Under classification, the outstanding feature was the determination to classify certain areas as Research Reserves, and others as Primitive Areas. In practically all Districts the determination as to the Research Reserves was left to the District Investigative Committees whose final recommendations have not yet been received. The determination of appropriate Primitive Areas is receiving careful study and attention in each District.

Comparatively few areas were listed for homestead entry during the year but a considerable number of earlier listings were recalled because of the final determination that the lands were not chiefly valuable for agriculture. This work of recalling erroneous listings must now be pretty well completed.

The subject of special uses involves the study of the Mt. Hood region by the special committee designated by the Secretary of Agriculture which completed its field work but not report. Studies of and reports upon municipal watersheds were completed during the year by Districts Three, Four, Five and Six, so that District One is now the only western District in which this study has not been consummated.

The only claims activity of importance during the year was that relating to fraudulent mining claims. Unfortunately remedial legislation was not secured because of opposition in the House Committee on Public Lands. The situation is further complicated by the decision of the Department of the Interior that gravel is a mineral, thus opening the way for many annoying mining locations along main traveled highways. However, a better understanding was in some sections arrived at with the mining interests.

The only project involving the coordination of National Park and National Forest boundaries was that of the Yellowstone which was investigated by a special committee appointed under authority of Congress but which has not yet formulated its report. The failure of the President to approve the bill establishing the Ouachita National Park prevented it from becoming effective.

Nothing further was done in the taxation study or study of the fiscal relationship of National Forests during the year except to give out certain data upon request.

WELL! WELL!

We take great pleasure in announcing the discovery of a rara avis - a Government employee who is indifferent to his pay check. Particularly we nominate Sam Swartz, our genial logging engineer, for this unique honor. It comes about in this way. Recently the Fiscal Agent in looking over his accounts, discovered an unpaid check issued to Sam Swartz August 15, 1925, covering a half a month's salary. When questioned, Sam disclaimed all knowledge of the incident, but upon taking it up with his bank discovered the fact that he never cashed this check. Sam says he needs the money and is pressing the claim hard. In the meantime, we understand the Internal Revenue Bureau is investigating Sam's income tax return for 1925 to see whether he falsified it by admitting that he received more salary than he actually did. (Some tribute also to our Fiscal procedure.) - D. 4 Bulletin

RANGE MANAGEMENT

By C. E. Rachford

New ways and methods of administering a valuable public resource in a businesslike manner have been sought. The season was marked by hard work, systematic planning, and obtaining the confidence of some 28,000 permittees through concrete demonstration that Forest officers are working in the interest of stockmen by insuring the permanency of the range.

Space prevents enumeration of the accomplishments of local Forest officers in applying known principles of range management. It is by the application of these principles, however, that we continually face the need for more knowledge and more facts on which to base sound conclusions. Seeking out these facts with increased interest and effort in administrative studies has indicated the need for better correlation of such work. By this correlation we face the need for more definite and accurate means of defining and measuring proper utilization of the forage crop. It is hoped that a tentative plan developed in consultation with several field officers may be refined until it will serve a long-felt need in range administration.

A study of the method of analyzing the work on a ranger district has focused attention on the need for adequate administration of the grazing resource, more uniform standards in range management, and the value of such analysis in getting the best administrative practice into effect.

Notable results were secured in the field of cooperation. Field examinations were made of game problems on specific areas by representatives of the Biological Survey, State Game Commissions, the Park Service, sportsmen's associations, and the Forest Service.

A policy of cooperation with the Biological Survey on rodent and predatory animal control was worked out during the past year, and plans developed which will secure more aggressive action in reducing damage to forest land.

It is hoped the year 1929 marks the end of agitation for specific legislation governing grazing on the National Forests. Some five years of consideration has impelled the conclusion that legislation satisfactory to all interests is impossible of attainment. It has proved further that wise regulations sensibly applied are preferable to legislation from which the Service could not depart without an Act of Congress. The Secretary of Agriculture has indorsed this view on the two remaining bills before Congress, and indicated that in his belief there is no need for further legislation.

Regardless of our belief that the policies of the Forest Service are sound there is always a feeling of uncertainty as to how they may be viewed by a new Secretary of Agriculture. The year in which a change of administration takes place usually furnishes the test. Nineteen twenty-nine was one of those years, and the new Secretary has demonstrated his belief in conservation and concept of the public interests involved. In a case involving the protection of a watershed and other interests he affirmed the decision of the Forester that public welfare is paramount to private interests. In another instance he held that the Forest Service has full authority to divide range allotments in order to fix more definitely the responsibilities of permittees and secure good range management.

Range surveys on the National Forests made satisfactory progress, and the management plans developed therefrom will be a concrete demonstration of the value of such work when the plans are actively and energetically applied by the administrative force.

ENGINEERING

By T. W. Norcross

The accomplishments of Engineering during the calendar year 1929 are as follows:

In the mapping and surveying work one of the outstanding accomplishments was the completion of the airplane survey of the Tongass Forest. The actual photographic and mapping work was done by the Navy Department but the Forest Service, both here and in the field, assisted greatly in the success of this project. In cooperation with the National Park Service a combination map of the Glacier National Park and portions of the Blackfeet, Flathead, and Lewis and Clark National Forests was issued. This map was lithographed in four colors. In District One about 600 square miles were covered by aerial photography. Of this amount about 400 square miles are on the Clearwater for timber survey use, 100 on the Nezperce for drainage and type maps, and 100 on the Kaniksu for control and map corrections.

On the Kootenai 6 townships were covered by a standard topographic map and 3 townships of coordinated surveys were completed by the G.L.O. survey.

In District Four, 680 square miles of drainage survey was completed on the Powell Forest and 70 square miles on the Boise Forest. Of the 680 miles 277 were original survey and 103 for map checking purposes. In connection with the above mapping 180 stations were occupied and about 50 points monumented. Also about 520 miles of traverse were run.

In the road work a most interesting and valuable meeting was held for ten days on the Santa Barbara Forest. This was attended by representatives from the Forester's office and seven Forest Districts. The results will be far reaching not only from the discussions of many road topics but particularly selection and use of equipment and advisable construction and maintenance practices. During the year work was started on standardizing timber bridges, specifications for construction and maintenance equipment, culverts, mess wagons, equipment warehouses, etc.

Decided advances were made in preparing transportation plans for protection. Work is now under way in three districts and a start in another will be made soon. A particularly interesting accomplishment was the preparation of graphs and tabulations from which can be determined the most efficient spacing of smoke chasers, whether a road or a trail is the better investment and the speed standard which should be used. In the preparation of the tabulations and graphs many variables had to be considered.

YE EDITOR DISCOVERS

Herbert N. Wheeler, the Forest Service's "silver tongue," has in the last five years fired his hearers with 1,259 lectures and 20 radio talks. In the aggregate, more than a quarter of a million people (279,936) have attended Mr. Wheeler's lectures in the last five years; his invisible radio audience probably ran to seven figures.

It is not known authoritatively how many offers Mr. Wheeler has had from firms seeking his endorsement of throat lozenges.

- - - - - -

In connection with the work on the white pine weevil, entomological work has gone about as far as it can in the control of the insect as it attacks the white pine. A new line of control is being sought because the insect spends from three to eight months on the ground. During this period it may be that he can be more easily controlled than after he has attacked the tips of the trees. Cooperation is being planned with the Japanese Beetle Laboratory by the Forest Entomologists of the Bureau of Soils and the Northeastern Forest Experiment Station in an attempt to work out some chemical which might prove attractive to the insect. It is hoped that something can be done to develop a substance to be used in traps whereby the numbers of beetles in a plantation can be materially reduced. The Biological Survey has been interested in the problem because it appears that most of the damage from the weevil occurs in pure white pine plantations. Possibly a biological factor is at work and it is believed that if other food can be found, mice and other rodents can be attracted to these plantations and so aid in the control of the insect. Perhaps mixed plantations are necessary.

- - - - - -

Murray Bruner (District Forest Inspector, Central States) is in Washington to prepare the final draft of the so-called Section 1 Report for Arkansas. The Governor of Arkansas formally requested a forest survey to be made by the Secretary of Agriculture. Under Section 1 of the Clarke-McNary law a study and recommendations of measures for the protection of the forest lands of the State from fire was made. It is expected that the report will be published by the Arkansas Agricultural Extension Service and that it will be ready for publication early in March.

- - - - - -

J. H. Price (Fire Control and State Cooperation in District 5) is in Washington for six weeks. He will correlate the cost and area reports for the various States. Mr. Price will remain for the District Foresters' meetings during the last half of March and will then make a field trip, probably in the Southeastern District, before returning to California, in order that he may become familiar with the cooperative work being accomplished in that section.

- - - - - -

Quite by chance on February 19 Ye Editor discovered that it was Chief of State Cooperation Hastings's birthday and that the members of his division had baked a cake, decorated it with candles; got together by themselves and "threw" a party. The members of the Division of Information who work on the same floor heard snickering sounds from the party and sniffed tantalizing aroma from the cake. But the door stayed closed. Imagine their chagrin on realizing that State Cooperation apparently means exactly what it says.

- - - - - -

Department Bulletin No. 1500, "The Gluing of Wood," by T. R. Truax of the Forest Products Laboratory is being translated into German by L. M. Cohn-Wegner, an engineer prominent in German plywood and woodworking industries.

- - - - - -

Statement of the Outstanding Accomplishments of the Branch of Public Relations for 1929 will appear in next issue.

DEATH OF SUPERVISOR CHARLTON

By H. O. Stabler, District 7

Supervisor R. H. Charlton of the Ouachita National Forest died on the afternoon of February 13 in a hospital at Hot Springs, Arkansas, as a result of an automobile accident which occurred on February 7 near Huntingdon, Tennessee.

Through December and January Mr. Charlton had been on detail in the District Office, and after visiting old friends of Cherokee days in eastern Tennessee he and Mrs. Charlton were proceeding in their personal car en route home when a blowout occurred in a front tire of the light sedan, with the result that the car overturned and was demolished to the extent that a new car was purchased. Complete details are not known at this time but it is understood that Supervisor and Mrs. Charlton arrived in Hot Springs on Sunday, February 9. Mrs. Charlton escaped with slight injuries from broken glass. Although there was no evidence of fractured bones, indications of internal injuries developed and on February 12 Mr. Charlton was taken to a hospital for thorough examination. We were shocked to learn the night of February 13 that he had passed away.

We understand the body will be cremated in St. Louis and the ashes sent to Los Angeles which for so many years was Supervisor Charlton's home. Mrs. Charlton will continue to maintain her home in Hot Springs for a month, at least.

Supervisor Charlton's record in the Service was happily summed up by Major Evan W. Kelley as follows when he noted in July, 1928, that Mr. Charlton was the only man in D-7 at that time in the twenty-five-year class:

"Twenty-six years ago on March 3 a young forester fresh from Cornell entered the ranks of employees of the Bureau of Forestry in the General Land Office. Although his hair is now deeply tinged with gray and his foretop has thinned out considerably after a quarter of a century or more of service he is as full of vim, vigor, and enthusiasm as ever.

"As an inspector in the early days in the West he faced many difficult situations which, because of the politics involved during that era, could be handled only by a man with a store of moral courage and a goodly stock of common sense. Unmindful of his own comfort and personal welfare he cleaned up some very bad situations which made not only for efficiency but established in the minds of the local people the very definite impression that men who used their positions in the Bureau of Forestry to further their political and personal ends had no place in the organization which had set about the task of handling the -then- Forest Reserves.

"After several years of creditable performance on the inspection job this young forester went to California where for twenty years he successfully managed the destinies of one of the important National Forests of District Five. His Forest was one of the most important in the United States; unique, in fact, in the character of its problems and in its close relationships to the affairs of the local public. Throughout the years of his administration he stood out among the leaders of the supervisors in the California District.

"Next we find him in the Eastern District where he tackled the administrative problems with characteristic aggressiveness and with the skilled hand of a good manager.

"His bright eyes still snap; his step has lost none of its elasticity; his mind has lost none of its keenness and facility for penetrating the outer shell of things and of striking at the heart of affairs. Truly, he has set up an enviable record and now after twenty-six (and more) years of strenuous service he is about to tackle one of the most difficult supervisorships in the Service (the Ouachita) and R. H. Charlton is sure to win."

Virtually Supervisor Charlton's last service was performed here in the District Office, and all with whom he came in contact will carry always the vivid recollection of his personality. He left Washington February 2, full of pep, and alert as always. The Ouachita Forest, District 7, and the Service at large have suffered a loss which no words can adequately express.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
> February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

VOL. XIV, No. 10. WASHINGTON, D. C. March 10, 1930.

BEGINNINGS OF THE FIRE WARDEN SYSTEM

By Helen W. Gordon, Shenandoah

Time was, when the warden system of fire prevention, detection, and suppression now in use, or fast being adopted on the Eastern National Forests, was quite as visionary and impractical as the steam engine or the airplane, or the radio, or a million other every-day devices.

Eighteen years ago, or in 1911, to be exact, work was started on the first boundaries to be acquired in the Southern Appalachians, and in 1913 the first tracts, the Alleghany Ore & Iron Company, and a few smaller holdings were actually placed under administration, under the supervision of E. D. Clark, Forest Examiner in Charge. We have progressed a long way from the title, but not so far after all from the ideas put into force during his administration.

Mr. Clark was a man small in stature, but of inexhaustible energy. From early morning until far into the night he gave the best of his mind and heart to the business of bringing the gospel of forest conservation to an untutored public.

So far as I have been able to learn, the fire warden idea was really originated by a man who was closely associated in all the early work of the Forest Service here, M. A. Price. Mr. Price was a native, owned a good deal of land in the mountains, and was thoroughly loved by all the mountain people. He had been in the habit of fighting fires to keep them from his own land, and of helping other landowners to do the same. It was his idea that such cooperation could be carried a step further and by offering compensation induce these same people to protect all the forest. Mr. Price was considered by many to be a "visionary," but Mr. Clark was quick to grasp the idea and to bend his indefatigable energies to carrying it out. Greatness often lies in the ability to see the value in another's apparently impractical ideas.

The original idea was to select a man in each community, an outstanding and influential man, pay him a retaining fee, say $5 per annum whether he fought fires or not, and allow him to select his own fire fighters whom we paid at the then munificent rate of 25¢ per hour. This amount was decided upon with a view to getting the best in the way of manpower. Wages in the Valley at that time averaged $1.25 per day for a ten-hour day. Already, however, there had begun to be a slightly upward trend owing to the declaration of war between France and Germany, and it was felt that this price would be sufficient to overcome such an advance, but hardly high enough with the increasing demand for labor to cause fires to be set for a job.

This scheme, after a very short trial, was frowned upon by the Comptroller, probably because we were paying men who might or might not perform any work for the Government, and wardens were thereafter advised that the position was an honorary one entirely, except when actually engaged in fire fighting. This apparently did not dampen their ardor, since we still have many who point with great pride to the fact that they are fire wardens in Uncle Sam's service.

In those days the Forest Service idea of fire prevention and suppression was entirely a new one to the people in this section, and I believe comparatively new to those who were holding the reins in Washington. The experience gained in the administration of the Western Forests had not been applied to the purchased Forests. Work plans and ranger analyses were conspicuous by their absence - perhaps had not been thought of. The work was of necessity a hit-or-miss variety, the outcome of everybody's ingenuity. The problem, everybody's problem, was how to secure the cooperation of a community accustomed to burn the woods each year to improve the grazing and to help the huckleberries along. Incidentally, the huckleberry theory was put forward not longer than a month ago when some people from the Natural Bridge Forest were fighting a fire trespass case in Harrisonburg, so we know that educational work must never stop if we are to be successful.

The first step was to secure men of such standing in their communities that their opinions and stand would have weight with the rank and file. Weeks were spent by Mr. Clark and Mr. Price in visiting and enlisting the aid of these men, and it is a monument to their judgment that many of the men whom they selected are still active wardens, sixteen years later. It was a difficult task for a man from such a different environment, in other words, a "D.Y.," as the northern people were known in the mountain sections at that time, to enlist the friendship and cooperation of these people, but even now we frequently have inquiries as to Mr. Clark's whereabouts, and comments to the effect that he was "certainly wrapped up in the Forest Service" or "it would be good to see him again."

The wardens had been selected, their interest aroused, and the next step was to secure the means of making their work effective. This meant that there must be some means of communication. Practically none of the wardens owned telephones, and without them a warden and crew and the Supervisor's office were almost as far apart as before the organization. As I have said, the Forest Service was entirely a new proposition and many people had the idea that the Government had come there to take what it wanted regardless of everybody's rights. This opinion was particularly strong in the mind of the man then in charge of the Shenandoah Telephone System, and, with the idea that the Government was planning to take his lines away from him without proper remuneration, he refused absolutely to allow the Forest Service to connect up with his lines or run into his switchboards without paying so huge a sum as to be entirely prohibitive. This was the only company having lines where we could use them; there was not sufficient money to equip the Forest at once with Forest Service lines, so Mr. Clark did the characteristic thing, set about to elect Mr. Price, his coworker, president of the company. I have been told many times by many people that Mr. Price was the only man in the whole country who stood a chance in a million of defeating the incumbent. Then followed weeks of intensive campaigning, when neither the Supervisor, his wife and family, the clerk, nor the office force slept except in snatches, but when the smoke cleared away we had a perfectly good president of a somewhat defunct telephone company, rarin' to get Uncle Sam's money for switchboard and pole connections and as many new subscribers as possible. As a matter of fact, when Mr. Price took over the presidency there was not money in the treasury to pay the operators, and a year later when he relinquished the post it was again on its feet, so he not only did the Forest Service but also the company and local subscribers a good turn.

(To be concluded in March 17 issue)

ACCOMPLISHMENTS IN PR FOR CALENDAR YEAR 1929

By Fred Morrell

Division of State Cooperation

A revision of cost estimates for protecting State and private lands in all cooperating States was undertaken. It involved determination of areas needing protection by types within the State and the laying out of Organization, Improvement, and Equipment plans for such measure of protection by types as would promise a determined standard of protection. These estimates will be used, in part, to determine Section 2 allotments. A reasonable understanding has been reached between the Forest Service, the Association, and the individual State Foresters as to the manner in which final allotments should be determined.

A study of the forestry situation in Arkansas has been made to permit the Secretary to make recommendations for protecting forest lands in that State. It is expected that the Extension Service of the State College of Agriculture will publish this report.

Cooperation under Section 4 of the Clarke-McNary law is now in effect, with 39 States and two Territories; two States, Utah and Mississippi, being added during the year. Last spring the New York Central lines cooperating with the State Forester of Indiana and District Forest Inspector Bruner, equipped an exhibition forestry train which supplied forest planting stock to farmers under Section 4. The New York Central Railroad contemplates running a similar train on a much larger scale within the next year. The train will carry a refrigerator car with nearly 400,000 trees, a forestry exhibit car, a lecture car, and combination sleeping and dining car. It is understood that the Pennsylvania Railroad and the Missouri Pacific plan similar trains during the coming year.

District Forest Inspector S. H. Marsh took an important part in bringing about a series of commercial forest conferences under the auspices of the U. S. Chamber of Commerce, the first of which was held in West Virginia in December. Others will be held throughout the coming year.

Mr. Wheeler gave a total of 164 lectures in 15 States, special emphasis in this work being given to promotion of specific and much needed State projects. Mr. Wheeler also gave 8 radio talks.

During the past year the laws of 16 States have been compiled and brought up to date by Miss O'Donnell with the assistance of two of the District Forest Inspectors.

Division of Information

"The Forest Problem" was prepared by Mr. Shepard and has been brought to the attention of the President, Director of the Budget, the Secretary, and of members of the House sub-committees on appropriations. It is expected that this report will be published in somewhat revised form this spring. In connection with this problem a five-year financial program was drawn up.

There has been an increased output and increased effectiveness during the past year in educational cooperative work of the Branch. Approximately 150 news releases and clipsheet items were issued and a large number of short items and special articles. Clippings received indicate that they ar being increasingly well received. Study of representative editorial comments indicates that several major ideas on which we have been hammering have been definitely sold to the newspaper editors through which they ultimately reached the public, such as conversion of marginal lands for timber growing and the role of the forest in flood prevention. Statements of our need for fire-protection improvements received widespread and influential support.

Full harmony and efficient cooperation between the Washington office and the field offices in press-relations work are being sought. A handbook on preparation of forestry news was prepared and distributed to the field. The use of radio was continued, regular programs being supplied to some 100 stations through the Department's radio service, and the Forest Service joined with other bureaus in presenting several radio talks over the nation-wide hook-up. It is estimated that each net-work program reached 1½ to 2 million people. Fifty-five thousand lantern slides were shown to 300,000 persons. Thirty-one loans of traveling school exhibits reached 10,000 people. The pamphlet "Forestry Facts for Young Folks" for the use of young peoples' forestry groups was published. The Washington office cooperated with local offices and States in their celebration of a State "forest week." Three hundred thousand pieces of printed material were mailed to cooperators and 40 publications, technical bulletins, circulars, leaflets, farmers bulletins, and forest map folders were printed during the year.

In the work of Visual Education,-three new films, "New Woods for Old," "Friends of Man," and "Selective Logging in the Lake States" were released, and two grazing pictures "On a Thousand Hills," a sheep picture, and "Green Pastures," a cattle picture, are now ready for release. Sixty-six prints of Forest Service films were sold to various organizations. The film "Forest Destruction" is progressing and will be finished sometime this year.

District 5 is making progress with the "Timber Growing and Logging Practice" film, suggested by this office, and it is understood that District 6 is going definitely forward with the film on fire prevention in logging operations.

Plans were made and submitted to the Department for two new exhibits, "Salting the Cattle Range" and "Forest and Water." In addition, a suitable number of small exhibits, colored enlargements, etc., were made and circulated from this office. It is our custom to prepare a leaflet for each of these exhibit pieces which can be distributed when they are shown, and 230,000 copies of these special leaflets, together with much other material, were distributed.

The records show that the Department Office of Exhibits were able to reach, with forestry material, 2,670,000 people, and the Washington office of P.R., with similar material, loaned to various interested groups, State foresters, clubs, civic organizations, and others, reached 2,339,000. In the Districts a total of 873,000 were reached in this way. Forest Service motion pictures were shown to 2,146,000, and through these mediums, the Office of Visual Education reached a total of more than 8,000,000 people with some message about forestry.

The Branch sent letters to all cigarette manufacturers asking their cooperation in fire-prevention education, and while the response was somewhat disappointing, one company did some radio broadcasting on the subject and got out some posters. Letters were also sent to all automobile, body, and truck manufacturers on the subject of equipping automobiles with ash receivers. There was a very good response to these letters.

Cooperation with the American Forestry Association on their forest-fire educational project in the South was continued.

WHY NOT ON EVERY FOREST?

Many Forests are capitalizing, in a PR way, on their annual reports, by giving the press a resume of their activities for 1929 and plans for 1930. These reports are appearing not only in local papers but in the larger daily and State-wide papers. - D. 4 Bulletin.

WILD LIFERS ON THE FIELD OF ARMAGEDDON

By L. F. Kneipp, Washington

The initiation on February 3 by the House Public Lands Committee of a series of hearings in relation to the so-called Superior-Quetico Bill marked the beginning of a struggle between the advocates of the preservation of esthetic beauty and the advocates of industrial exploitation of natural resources which may be epochal in its consequences. The Superior-Quetico movement contemplates the eventual establishment through international agreement of a great international forest, embracing 14,500 square miles of the Rainy Lake drainage of which approximately two fifths is in the United States and three fifths in Canada. The proponents of this movement wish to check any further disturbance of the lakes and streams by waterpower developments, any further utilization of timber which unduly impairs the scenic value of the region, and any further occupancy of the area by hotels, resorts, summer home communities, etc., which will be incompatible with the preservation of its primitive character and beauty.

The introduction by Senator Shipstead and Representative Nolan of bills to this end has placed the matter squarely before the Congressional Committees on Public Lands. The House Committee has been exceedingly liberal in affording time for full discussion and day after day has listened patiently to both advocates and opponents of the bill. There has been no other instance in which the supporters of the wild life concept have had such excellent opportunity to present their case, and such action as Congress may take will be with a clearer comprehension of the fundamental principles involved than has hitherto been established. If the bill is enacted by Congress the principle of subordination of industrial utilization to scenic beauty and recreational value will be definitely established.

The opponents of the bill have somewhat complicated the fundamental issue by the claim that its enactment would be in contravention of two specific treaties with Canada. But notwithstanding this fact, it appears possible that the present Congress is going to definitely determine whether it shall or shall not be the policy of the Federal Government to subordinate industrial exploitation in areas where unique and outstanding scenic values and recreational opportunities exist.

THE WORK OF THE DISTRICT LIBRARY

By Esther Wilson, D. 5

The work of the District Librarian falls into two distinct categories. First, and most obvious, comes the technical and more or less mechanical job of keeping the library machinery going. This consists of such work as, ordering books; cataloging and classification; mechanical preparation of books for the shelf (labeling, numbering, book-plating, binding, etc.); ordering, checking and routing magazines; checking books out and in; keeping library records; and current correspondence, bids, reports, etc.

All of the foregoing details are simply a means to an end. They contribute toward the efficient performance of a second and much more important duty. This is less tangible and cannot be defined or limited by a word or phrase, but in a measure it is the establishment of a contact between the men in the District and the Library and its resources. This consists not merely in handing out the books as they are requested, but in seeing that they are requested, and, in some cases, anticipating the need and supplying it before a request becomes necessary.

It is the duty of the Librarian to see that the right book gets to the right man. This may be done by devious means. A wide-awake attention to seemingly insignificant incidents will often give a clue to the interests and needs of some individual. By noting what type of material a man asks for, further resources may be put at his command. By being alert to the most casual remark dropped in ordinary conversation, the Librarian may discern a need or an interest which may prove useful to her.

All this, however, presupposes some sort of contact with the persons in question. The more difficult task comes in reaching the group who are not users of the Library. This, of course, is admittedly one of our greatest drawbacks; lack of familiarity on the part of the Librarian with the individuals in the field, and on the part of the men in the field with the Library. This situation can be met to some degree by such means as are already being utilized in this District--informal library notes or book reviews sent out each fortnight, and lists of accessions sent out every three or four months.

Acting upon the theory that "the better the man the better the forester" the service of the Library takes on a much broader aspect. Very obviously it is a medium of technical training, and scarcely less obviously for all-round broadening of the mind and enlarging the horizon. With this in mind it becomes the duty of the Librarian to stimulate or keep alive in the men an interest, not only in technical literature, but in any literature which will add to the general welfare of the individuals.

YE EDITOR DISCOVERS

Seven hundred and twenty one men took the Ranger examination held last fall, and 81 passed. Fifty six names will be held over from the last examination. This total of 137 is much larger than the normal number of appointments made from the Ranger register. New appointments from the Ranger register have decreased during the last ten years and the breadth and difficulty of the Ranger examination have been increased, with a view to securing those men best equipped by education, intelligence, and experience to meet the steadily rising demands laid upon Forest officers. The full high school mental test widely used by the Civil Service Commission was employed in the 1929 Ranger examination for the first time. Some criticism has arisen because individual men failed to pass this test. The subject will receive exhaustive consideration during the District Forester meetings.

- - - - - -

Several central Washington counties alarmed by fire damage to watersheds and costly flumes studied their problem and sent Mr. M. E. Field of Chelan, Washington, to Washington, D. C., to see what could be done to secure larger funds for National Forest protective improvements, particularly low cost roads and trails. The Englebright bill bears directly on the needs of these counties and Mr. Field has interested himself in active support of the bill.

- - - - - -

Delay in the passage of the deficiency bill, which includes amounts to cover 1929 fire suppression, emergency guards, and roads and trails, puts us in a tight place from the disbursing standpoint. After the February bills are paid the entire Service will have only $257,000 available for salaries and miscellaneous expenditures, and normal March expenditures are around $400,000.

- - - - - -

Supervisor Kreuger of the Gunnison has sent us a picture of an Engelmann spruce on his Forest that has the following measurements: d.b.h. - 64"; diam. at ground line - 73"; total height 164 ft. (secured by Abney Level); merchantable height - 128 ft. (to 7" top).

Ye Editor would like to have proof (pictorial) of other "biggest, best, oldest," etc. He will then further enlarge them (photographically) and they will be hung in the Atlantic Building. As a prize for the winner, a synthetic silk necktie, will be awarded at our next anniversary birthday celebration.

- - - - - -

District Forester Kelley is negotiating with the Aeronautical Division of the Department of Commerce looking to some way of preventing airplane fires. There have been a few such fires. Experiments in the Northwest have shown that cigars and cigarettes are still burning when dropped from an elevation of 1,000 feet.

- - - - - -

A Wood Products Department has been established by the Farmers Federation of North Carolina to develop a market for timber products. Farmers have had no regular and satisfactory market for wood products, although somewhat over 50 per cent of the farm area of western North Carolina is classed as woodland. The woodland area of 1,811,818 acres and about 180,000 idle acres is a potential source of wealth. The work of the Wood Products Department will also include a reforestation program.

- - - - - -

Employees in the Washington Office have chosen the following to serve on the Advisory Committee during the year beginning March 1 - C. M. Ballard, Lena A. Daniel, Goldie M. Randal, Helen B. Smith, and Harry Irion. There has been an Advisory Committee since 1922. As its name implies, this committee acts in an advisory capacity to the Forester with respect to matters that concern the welfare and efficiency of Washington office employees. Through this form of representation the employees collectively participate in an interchange of opinion and counsel with the Forester and his immediate assistants in matters affecting the interests of both the employees and the Service. The Committee acts on its own initiative as well as in response to requests from the Forester.

VIRGINIA COMMERCIAL FORESTRY CONFERENCE

By A. B. Hastings, Washington

A commercial forestry conference was held in Richmond, Virginia, on February 11 and 12. Initiated by the U. S. Chamber of Commerce to bring together business men directly or indirectly interested in forestry, it is the second of a series which the U. S. Chamber is promoting in the South, the first having been held in West Virginia in December. The attendance averaged perhaps 50 or 60, at the various sessions, and the members of the General Assembly were the guests of the State Chamber, at a banquet. The meeting was a decided success. Two important papers developed the presence of a large amount of acreage of submarginal land available for forest use.

Strong support was given to the plan of the State Forest Service for the acquisition of demonstration State forests, by former Speaker Ozlin of the Virginia House of Delegates.

Mr.Ozlin, formerly a vigorous opponent of the issuance of bonds for highways and other State works, expressed himself as in favor of the idea of employing this plan to finance the purchase of State forests. The State forest program is being aggressively promoted by the Izaak Walton League, which was represented on the program by its State President, Mr. Max Fleischer.

The speakers at the banquet were Mr. Butterworth, President of the U. S. Chamber of Commerce, and Major Stuart. Governor Pollard, through the Hon. J. Sinclair Brown, Speaker of the House of Delegates, sent greetings and regrets at being unable to be present. Major Stuart made an able plea to the effect that, while land utilization and other surveys should be made, it is not necessary to wait for such studies before aggressively attacking the obviously necessary and desirable tasks such as the protection of the forests from fire and the acquisition of State Forests.

Mr. P. Ryland Camp, Vice President and General Manager of the Camp Manufacturing Company, stated that he first was interested in a plan of forest management for the Camp properties in Southeastern Virginia and Northeastern North Carolina by an address given by Mr. W. L. Hall at the joint meeting of the American Forestry Association and the Southern Forestry Congress at Richmond, January 1926. Soon after this meeting Mr. Hall was employed by the Camp Manufacturing Company to make a survey of its forest problems. The plan evolved by Mr. Hall was promptly accepted by the company and the practice of selection cutting for permanent production of wood material sufficient to run the operation has since been followed.

An important result of the meeting was the formation of a Virginia Forestry Association. The officers for this Association, headed by Mr. W. D. Tyler of the Clinchfield Coal Corporation, Dante, Va., as President, were elected by the Conference with instructions that they call an organization meeting of the new association at some future date.

YE EDITOR IS REPROVED

The interesting picture on the cover of the Service Bulletin of December 16 and 23, 1929, with its charming message from the Forester is most inspiring. There is, however, one criticism I would like to make.

Is not forage a gift from the forests to the nation? Does it not rank in importance at least with Cellulose Products, Synthetic Lumber, or Fuel?

The recent proposals by the President regarding the disposal of public domain have elevated grazing to quite a superior position in public interest, and it might be well to remember this in the future. - C. S. R., Lassen

"VANISHING FOREST RESERVES"

Under the above title a book has been issued by Willard C. Van Name, an assistant curator in the American Museum of Natural History, which in unmeasured terms condemns the timber cutting policy of the Forest Service. The publication is characterized by a tremendous deficiency and misunderstanding, if not misinterpretation, of facts and by extremes of statement or allegation. However, the unfortunate probability exists that many well intentioned persons will derive from the book a wholly erroneous conception of National Forest timber sale practice and policy. Any member of the Forest Service who is compelled to listen to critical and condemnatory statements as to our forest policies may simplify the problem of reply by determining whether the critic bases his conclusion upon Mr. Van Name's book and the extensive series of newspaper items and pamphlets which preceded it. - L. F. K.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people . . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

Vol. XIV No. 11 Washington, D. C. March 17, 1930

RANGER PULASKI RETIRES

Edward C. Pulaski retired from active duty as Ranger on the Coeur d'Alene February 9, after 21 years of outstanding service. The following tribute is paid him by Supervisor McHarg.

Edward C. Pulaski was born on a farm near Green Springs, Ohio, February 9, 1868. He had the spirit of the pioneer as a heritage, since he is a descendant of Count Pulaski of Revolutionary fame. The decendants of the count, including Pulaski's father and uncles, came from Poland in the 50's. On his mother's side he had an uncle who also was venturesome, as evidenced by the fact that he wrote a letter dated in 1861 from Fort Walla Walla stating that he and some others were going up the Snake in the spring to establish a town at the forks to be named Lewiston in honor of the Lewis and Clark expedition.

Following the inherent urge, Pulaski started West at the age of 16, left the Northern Pacific, just completed, at Thompson Falls, and crossed into Idaho to the mining settlement of Murray in May, 1884. He remembers that there was about fifteen feet of snow at the sumit.

Pulaski's first employment was as an assistant packer working for Saul Nathan, who owned a store at Murray.

After working as a packer Pulaski worked in the mill of the Old Parrot mine. For four or five years he worked around Butte and Anaconda in the mills and mines, and about 1888 went to Silver City, Idaho, working there in the mines and also prospecting in the Salmon and Clearwater drainages.

In 1889 Pulaski came back to the Coeur d'Alenes, working first in the Tiger mill at Burke. For the next eighteen or twenty years he worked in many different capacities in and around the then growing mining region of the Coeur d'Alenes. He could qualify as a miner, steam engineer, smelterman, plumber, carpenter, blacksmith and quartz-mill expert.

By 1908 the Coeur d'Alenes were becoming quite civilized, and Pulaski turned his hand to about the only pioneer work there was left. He entered the Forest Service in July 1908, and has been continuously in charge of the same ranger district, known as the River District, up to the time of his retirement. In 1909 an allotment of $1000 was given Pulaski to construct twenty-six miles of trail from Wallace into the St. Joe Big Creek. The whole twenty-six miles was built, and parts of the trail are still in use.

Probably the most colorful period in Pulaski's term of service was during the fire season of 1910. The country was all largely green and supported some exceedingly heavy stands of white pine, particularly in Placer Creek, Slate Creek, and Big Creek. The first fire of any size that season occurred in the latter part of July near the Slate Creek summit where the present road crosses. A second fire occurred on the West Fork of Big Creek. A third started on Moon Creek on the Coeur d'Alene River. These fires and many others were successfully suppressed, but with the continued drought small fires developed into big ones, and by the middle of August fires from the St. Joe River were rapidly working toward this district. By August 19, Pulaski had about 120 men on the St. Joe-Coeur d'Alene divide working on fires in the two Big Creeks. The situation was becoming perilous, and, in common with all other Forest officers, safety for the men was becoming the first thought. The morning of August 20 was so bad that Pulaski realized a crisis was near at hand. He realized that the crew could not remain in safety where they were, and the men, themselves, were becoming frantic. In the afternoon, in spite of all Pulaski could do, about fifty men broke away and rushed down the St. Joe Big Creek, where that night they lost their lives. He started out toward Wallace with the remaining crew of forty-five or fifty men, but the smoke was becoming so dense that he could not tell whether or not to proceed. He left the crew in a mining tunnel, the J.I.C. tunnel, at the forks of the West Fork of Placer Creek, and proceeded ahead with two men to see if they could get through. He had in mind that a mile and a quarter down stream there was another tunnel, which possibly the men could make, and on reaching this tunnel he decided that here was a place of safety, and sent a messenger back to bring the crew on while he prepared the tunnel by throwing out all of the material stored there, including hundreds of pounds of powder and equipment. Very soon the crew came down the trail, Pulaski and his helper, who is now a mail carrier at Kellogg, held the trail between them, and herded the men into the tunnel with their two horses. This occurred about 6 p.m. Pulaski did everything he could to quiet the men, and proceeded to barricade the mouth of the tunnel with such materials as were at hand. The crew was none too soon in reaching this haven, for the fire rapidly burned down through the heavy stands, making a fiery furnace of the Canyon. Pulaski ordered all the men to lie down on their faces, while he stood as well as he could at the mouth of the tunnel, holding them back at the point of a gun. He finally had to retire from the mouth of the tunnel, but all of the crew were sufficiently subdued to be quiet and stay where they were. One of the horses had his tail burned off, the heat was so intense. At 11 p.m. the fire had spent its force outside and was rapidly cooling off so the entire crew came out in the open air and dropped down and went to sleep. Five men were found to be suffocated in the tunnel, but in each case Pulaski's orders to lie down had not been followed. A day or two later the body of a man was found up the trail. He was the only one who had not reached the tunnel. About daylight August 21, the half-alive crew stumbled into Wallace, and were immediately taken to the hospital. Pulaski spent two weeks in the hospital before he had sufficiently recovered to get out. Exposure to heat and smoke seriously affected his eyesight, and he has been handicapped by this ever since.

BEGINNINGS OF THE FIRE WARDEN SYSTEM

By Helen W. Gordon, Shenandoah

(Continued from March 10 issue)

So far so good; we had the wardens, we had the crews and the telephone connections, but how to keep the interest up. We did not have fires enough any more to stir even a mild excitement, and surely we could not start them just for the fun of calling out the wardens. The Forest at that time consisted of two purchase units, the Potomac to the West, and the Massanutten to the east, separated as it were by the Shenandoah Valley which bisected the area. A certain amount of competition already existed in the matter of fires and it was thought well to foster so new a cooperative spirit of rivalry to the utmost.

A directory of fire wardens and their crews was prepared for each purchase unit. "Fire-fighters of the Massanutten; Massanutten Pioneers Old and New", consisted of eight pages bound in brilliant blue. "A New Story of the Virginia and West Virginia Borders", in gorgeous red binder set forth the fire-fighting strength of the Potomac. I have been unable to learn definitely whether these books were printed at Government expense or whether they were printed by "private subscription," Mr. Clark being the "private subscriber." I strongly believe the latter to be true. The printing was done in Woodstock and not by the Government Printing Office. We have one each of these in our files and they are tenderly treasured. I am told that there are still some in the hands of the wardens but if this is the case they are not giving them up. In looking through I find that except where they have answered the "Great Call" our warden personnel is practically unchanged since 1913, except for new additions.

As a result of pooled ideas, the age-old scheme of competition was decided upon as a good way to further the interest and there ensued a great orgy of letter writing to the wardens, of whom there were 34 on the Massanutten and 30 on the Potomac, inviting them to a get-together, or rather a pull-apart party, a tug-of-war, between the Massanutten and Potomac wardens.

The Shenandoah County Fair was rather a young and tender infant at that time and was eager for attractions of every kind, so, the Fair officials agreed to give free admission on the first day to all fire wardens who came to participate in the tug-of-war, and believe it or not, the Shenandoah County Fair was the most popular place in the world on that first day.

A shield was prepared in the regulation Forest Service form, having spaces for six wins, and it was to become the property of the side winning it four times. The first contest, staged in 1913, was a riot, the biggest attraction of the Fair. The survey crews came in from the field and there was a big parade through Woodstock and out to the grounds, led by E. R. Conrad on a mule, at least he says he rode the mule. We have no authentic information on this point, but I was told that at least a few of the mules wandered nonchalantly about the town to be caught by the best horseman, or muleman, as the case might be. A picture of that parade would bring back memories to the veriest "old timer", if the eastern Forests can really boast of such a thing as an old-timer. Capt. Whitten, Grady Saulpaugh, A. P. Hamilton, A. M. Ocherblad, R. D. Brown, E. F. Benedum, D. T. Gregory, and many others, some of whom have gone to seek greener pastures.

W. H. Stoneburner was the Ranger in charge of the Massanutten at that time and consequently the leader of the Massanutten forces. They say he put a big 300-pounder on his end of the rope, beside all the other huskies he could find. On the other side were such puny individuals as John Keckley, Arthur Wood, Jim Barbe "and how." At any rate the Massanutten was the victor in this and the contest of 1914, and believed themselves invincible. For some reason no contest was staged in 1915, although no one seems to know why, and in 1916 the shield was won for the first time by the Potomac wardens.

By this time the Fair, as well as the warden organization had grown to such proportions that free admission could no longer be offered to half the countryside and the contest was held in Woodstock. Early in 1917 the Massanutten and Potomac units were merged into the Shenandoah and lost their identity as separate Forests. Headquarters were moved to Harrisonburg. Mr. Clark shortly left the Service to buy bark for the Houck Tanning

Company and the tugs-of-war were things of the past. The shield is in proud possession of the Massanutten District, by virtue I suppose of two wins recorded thereon. There are three empty spaces which might some day be filled although the possibility seems remote. The wardens system, however, continued to thrive and was extended to the Shenandoah where it appears to have been received as enthusiastically as on the Massanutten and Potomac.

Present-day interest is sustained by warden meetings held once each year when object lessons, slide lectures, and good food combine to take the place of the olden tug-of-war. The warden strength of the Forest is now 120, and the gospel of fire prevention and suppression is so thoroughly disseminated that it takes nothing more than a dangerous day to place every warden on his toes. Our rate of pay for fire fighters has not increased from the 25¢ per hour of Mr. Clark's days, which also serves to show that fires are not suppressed for the money there is in it, but because "it pays."

And so, while we point proudly to our record of less than one-tenth of one per cent of the Forest burned over each year, we pause to give credit for our success where it is due, to the pioneers whose far-sighted policy of cooperative fire protection has made it possible.

- - - - - - - -

Mr. Clark, who was sent a copy of the "Eastern District Digest" containing the above article, writes as follows:

"I thank you very much for sending the Digest and your personal note but doubt if any one person is due the entire credit for the warden system. All the force I am sure did their best to get the right personnel in the warden force from the start and that was what counted. As time went on good men were glad and willing to ally themselves with an organization which the mature judgment of the community had pronounced "sound."

"Fire protection was not, even from the first, counted as being the sole justification for the warden system, and if I have any real criticism of Mrs. Gordon's article, it is that it seems to me she has struck one note and neglected a good deal of the rest of the scale. President Hoover is reported as being determined to get the people as a whole to do more in regard to governing themselves. This very note was struck back in 1913 around the Massanutten and Potomac areas, and the wardens responded with their moral support and interest. They put up most of the fire notices and then considered it a personal insult if any fellow of the community dared molest them. If we had to go to court, their support was with us. Most trespass cases in those areas, never occurred because the possible offenders knew that the sentiment of their own community would frown on such transgression."

USE PUMPS

By C. R. Tillotson, Northeastern States District Inspector

I have read with considerable interest Spencer's article in the February 3 number of the Service Bulletin. Spencer raises some questions which I believe merit serious consideration.

I cannot speak for the West because my experience there has been limited. Perhaps it is not feasible to use pumps and water in that section to the same extent as it is in this Northeastern region with which I am familiar. I will say that in this part of the country at least, we are all pretty much sold on the use of water, not only for making fire lines safe but also for direct attack on fires. The States here are purchasing the small, five-gallon knapsack pumps literally by the hundreds, and are finding these very effective for use on ninety per cent of ordinary ground fires. Further than that, they are going in extensively for power pumps. Various kinds of these pumps that are in use are the Northern, Evenrude, and Fitzhenry-Guptill. There is no question about these power pumps being effective in direct attack on fires. We had one fire in Massachusetts this year which the State men were called on to handle when it had reached a size of about 2,200 acres with a fire line approximating eight miles in extent. The State men of course should have been called earlier but they were not. Six pumps of the Fitzhenry-Guptill type were put on the fire as soon as possible after the men were called. At one time one of the pumps was forcing water through 6300 feet of hose to an elevation better than 400 feet above that of the pump itself. About fifty men were employed in manning the pumps and handling the hose. By using these fifty men, the warden was able to send home 200 men. In other words, these fifty men and the equipment took the place of 250 men. I do not know of any other instances that are quite so striking in regard to the effectiveness of these pumps but I know that where they have been used, men would not think of going back to the use of shovels, rakes, etc., except to supplement the pump.

This leads me to the question of whether the Federal Service is entirely up to snuff in the use of this kind of equipment, where it can be used to advantage. During the time that I have been in this region - that is, during the last five years - I have attended two of the forest fire guard training camps. At these camps we had a mock fire which the men handled according to our standard methods. Trenches were dug around the fire. It ordinarily takes a crew of ten men three hours or more to put in a mile of good trench, where the going is not too bad. Both of these fires started near good streams of water, presumably by fishermen. I could not help but think as I saw how the fire was being handled, how much more effectively it could have been handled, surrounded in the first place, if use had been made of the power pump. On one of these fires there was a power pump present but it was not used for direct attack; it was simply used to make the fire line safe. The fire line, of course, should always be made safe but it seems to me that a sound principle in combating a fire in the forest is to stop its running just as soon as possible. This canbe accomplished most effectually in the case of surface fires at least by the use of water, either by using knapsack pumps or power pumps. I think that in some respects the Federal Service can take a leaf out of the notebooks of State organizations, such as Massachusetts, New York, and Maine where the use of water pumps has been developed probably to a greater extent than in any other part of the country.

HANSOME IS AS HANSOME DOES

By E. N. Munns, Washington

Everyone knows Harry Lauder's song, "She's as bonnie as the heather," but few know just what heather is like. If you can picture to yourself a field, densely carpeted with low, bushy shrubs something like our huckleberry or bear clover, a foot or two high, each bush with many pliable stems along which are a few short and narrow, dull green leaves, you can visualize the heather. But your picture is not complete until you tuft each upright stem with two or three inches of small, pinkish-purple flowers, and there are at least 10 such flowers per square foot. The blossom lasts for weeks, for as the lower blooms fade and drop, new flowers open at the top. This flower is, of course, the "bonnie" flower of the song, and indeed a field of this heather, heath, or heide (the Latin name is

Calluna) is beautiful. I know of nothing like it anywhere.

Heather, however, has little to commend it but its beauty although it covers thousands if not millions of acres of land throughout Northern Europe. Its presence usually indicates something wrong with the soil. In one place it may be a lack of available plant food (often lime), the presence of a hard-pan layer not far below the surface, or sandy soil too coarse to hold water and therefore too dry for other plants. It nearly always indicates soil too poor for profitable agriculture. Thus, in the Netherlands where agricultural land is at a premium, more than 10 per cent of the country is waste, and this is covered with heather. In Denmark the heather lands amount to about 8 per cent. When found in the forest it indicates poor silviculture, or that the soil troubles have not been corrected, and it is a detriment to the stand because it removes water and makes reproduction difficult. On soils which would otherwise erode or blow, it has a real place, but commonly on such soils it grows so scantily that it has little protective value.

The heather, too, constitutes a real fire hazard. It is highly inflammable during dry seasons, it burns rather fiercely, and it makes a quick, hot fire. Young plantations or reproduction starting in the heather have little chance to survive a fire, because of the intensity of the flames. As the bird and rabbit hunting is good in heath areas, numerous fires are started by shotgun wads, as well as by the careless hunter's cigarette. Sparks from railroads also start many fires, probably more than from all other sources. As fires spread rapidly and as there are usually not many people living in heath lands, such fires burn relatively large areas, and 100 to 500-acre fires are not at all uncommon.

Heather land can be put to profitable use by forest planting, but planting oftentimes must first be preceded by costly soil treatment. In places, as in Germany, it may be by the addition of marl or lime-rock; in others, as in parts of Denmark, by subsoil plowing at a depth of two or three feet to break up the hardpan. In some places and under some certain specific forest and soil conditions, burning is used to get rid of raw humus, and so sweeten the soil. This latter practice, however, is not general, is done only on very small areas, and is done only when there is ample protection both in the way of firelines and personnel. It is a practice, I hasten to add, that is not in general favor.

YE EDITOR DISCOVERS

A conference was recently held by Messrs. Headley and Wold with Colonel Young, Assistant Secretary for Aeronautics in the Department of Commerce, in which the problem of preventing smokers' fires that might be started from butts thrown from airplanes was discussed.

Colonel Young explained that the Department of Commerce now has a regulation which prohibits the dropping of articles from airplanes. He plans to call this matter to the attention of all pilots and commercial airplane companies on the Department's mailing list and to inform them that a cigarette or cigar butt is an "article" in the meaning of the regulation covering the dropping of articles from airplanes. He believes that we will have no difficulty in securing the hearty cooperation of the air transport companies but anticipates that we will have most of our trouble with itinerant fliers and air mail pilots The Department has a list of these men, however, and will be able to reach all of them through its publicity material. Colonel Young has promised to send the Forest Service copies of this material, which we can rebroadcast. With both the Department of Commerce and the Forest Service working on this problem the danger should be curbed to a great extent.

- - - - - - - -

Chris Rachford has returned from a month's trip to Wenatchee, Wash., and the District headquarters of D-5 and D-3, and gives us the following report on the investigation of the Wichita proposals for the enlargement of that Forest by the purchase of 35,000 acres of private land; the construction of retaining dams for recreational and migratory bird uses; and the further development of improvements necessary to handle game on the National Forests. These proposals were incorporated in bills introduced in the House by Representative Johnson and in the Senate by Senator Thomas. One of these bills provides for $275,000 for the improvement of the existing area and the other bill provides for $689,000 for the purchase of private lands.

On February 25 Rachford, Hatton of D-2, and Seth Gordon, Conservation Director of the Izaak Walton League, and other representatives of local and State Chapters of the Izaak Walton League made trips over and on the Forest by airplane, automobile, on foot and horseback. A series of interesting meetings were held at the towns of Lawton, Hobart, and Chickasha. The interest manifested by all in attendance at these meetings was most impressive. There is a real demand from the surrounding towns for better watershed protection to civic water supplies and better recreational facilities on this area. The Wichita is unique in that it is the only mountainous or hilly country in an otherwise plains area and affords the only opportunity for recreation to adjoining towns within 200 miles of it. There are many points of policy involved in the proposals which must be definitely settled by the Washington office before reports on the two bills can be made.

- - - - - - - -

There are some 70 odd Assistant District Foresters, District Foresters, and other officers in our District offices scattered over this broad land. They know what is going on, and could write of interesting things, important things, strange things, serious things for the readers of the Bulletin.

But hark to this - Ye Ed. in going over these names counted on the fingers of one hand all who had written anything for the bulletin, and when he had finished counting there were a couple of fingers left over.

There can be, of course, only one reason for this. These 70 with the negative literary complex believe that they are not permitted to write for the Bulletin. We write this therefore not only to assure the 70 that there is no prohibition against their contributions, but to urge them to save Ye Ed. from the danger of becoming an addict to finger counting.

- - - - - - - -

The Office of Personnel and Business Administration is anxious to get hold of all clippings of articles that call attention to the value of the work done by the Department of Agriculture. If, in your perusal of the home town sheets, you find any articles of this sort, send them in to the Washington office of the Forest Service, and we will see that they reach the proper place. While we are on the subject, PR in Washington still likes to receive clippings on forestry matters from the field.

PLEASE HELP THE BLIND

By I. T. Haig, Northern Rocky Mtn. Exp. Station

All I know is what I read in the Service Bulletin. But it seems to me that foresters and public alike are considerably short-sighted when it comes to recognizing just what the Service is doing in forest management and I rather think that Hopkins of the Chippewa expressed a fairly general opinion when he classed our present management practices under the rather nasty sobriquet of "salvage cuttings."

It is undeniably true that most of our management operations deal with the removal of mature and overmature timber and very rarely with thinnings and other intermediate cuttings that we mentally associate with that Olympian term "intensive forestry." Nevertheless, intensive or not, plenty of good, honest silviculture is being practiced to-day on the National Forests. The writer has seen three of the four generally recognized types of reproduction cuttings, namely, clear cut, seed tree and shelterwood, applied within the boundaries of the western white pine type alone, though here the seed tree method is the one in most common use. The selection system, requiring perhaps the highest degree of skill in application, is being used in modified form over large areas in the lodgepole and western yellow pine types. And one need only refer to Forest Service marking rules or to Hawley's revised, "Practice of Silviculture" for the citation of many other examples.

What if we are forced to compromise at times between pure silviculture and good economics; the European forester modifies his cutting methods very definitely to meet economic needs and feels that he is practicing good silviculture notwithstanding. The writer would be one of the last to deny that we have a great deal to learn; that both adequate knowledge and skill are often lacking; that it is perhaps sometimes difficult to draw the boundaries between, let us say, the cut and run method of the private operator and some of the so-called seed tree cuttings on National Forest areas. None the less, in spite of blunders and failures, we have successfully applied recognized silvicultural methods over large areas of National Forest land.

Perhaps it is the very fact that these areas are large and relatively inaccessible, and that it has been impossible to put them along some highway neatly ticketed, for example, "Cut-Over by the Seed Tree Method" that accounts for tardy recognition of the measures being used. The point is that unless we foresters remember that we are practicing standard silvicultural measures and recognize and train the general public to recognize, such practices when they see it as opposed to pure salvage cuttings designed simply to strip off the mercantable timber, we are riding for the fall so ably pictured by Hopkins.

THE "PRACTICING FORESTER" CERTIFICATE

As a rule, four or five years of study are required to complete the correspondence courses necessary to qualify for a "Practicing Forester" certificate. It is not easy therefore to obtain, and no large number of them will be issued for several years. The requirements are such that the certificate will be a real tribute to the recipient. The certificate not only stimulates study but it encourages effective application of the knowledge gained to the resources for which the student is responsible.

Men who have received this certificate are: Claud C. Shannon, Forest Ranger, Targhee N. F., April, 1928 William M. Hurst, Forest Ranger, Dixie N. F., January, 1929 George C. Larson, Asst. Supervisor, Uinta N. F., May, 1929 Wilford Bentley, Forest Ranger, Powell N. F., January, 1930 Ray Pickett, Forest Ranger, Targhee N. F., January, 1930 Leland D. Heywood, Forest Ranger, Powell N. F., January, 1930 George A. Miller, Forest Ranger, Lemhi N. F., February 1930 Blaine Betenson, Asst. Supervisor, Wasatch, N. F., February, 1930.

MONSSON LEAVES LABORATORY

W. H. Monsson, chemist on the pulp and paper staff at the Forest Products Laboratory, will leave the Laboratory March 20 to join the Munising Paper Company, Munising, Michigan. Monsson is a graduate of the University of Illinois, coming to the Forest Products Laboratory staff in 1923.

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson, Secretary of Agriculture
February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

VOL. XIV. No. 12. WASHINGTON, D. C. MARCH 24, 1930.

JUDGING UTILIZATION OF NATIONAL FOREST RANGES

By Alva A. Simpson and E. D. Sandvig, Custer

Mr. Hill's discussion of methods for judging utilization of National Forest ranges in the January 20 issue of the Service Bulletin is timely and has been the subject of considerable thought on the part of Forest officers that are charged with the responsibility of managing our forage resources and maintaining as a climax type the economically useful species as found in the local association of forage plants. Range Management should be the science of encouraging and perpetuating the species of plant life that will contribute most to the economic welfare of the local livestock industry. To manage the forage resources wisely in conformance with those objectives certain fundamental data are required, and accurate judgment of the degree of utilization is one of the important factors.

The method suggested by the several representatives of Range Management has desirable features but in substance inaccurately measures the important factor of volume production, which varies in accordance with precipitation and climatic factors.

Grazing Inspector Lommasson after considerable research came among others to the following conclusions:

1. Forage crops vary in quantity between seasons and dates.
2. Leaf and culm production of grasses are not constant, but vary under different conditions and during different years. (In 1926 stem growth of Festuca idahoensis by weight amounted to only 14.6 per cent of the total volume produced, in 1927 it amounted to 51.25 per cent, a variation of 36.65 per cent. Greater variations than this are found in other species.)
3. Ratio of leaves to culms for average groups by species having the same unit area of base, can be accurately measured by weight.
4. The weight factor incorporated into the present research method will give a coordination of leaf and stem volumes and a weighted average of utilization for each species.

Lommasson developed the following form under which each important forage plant may be listed.

FORM FOR DETERMINATION OF UTILIZATION OF GRASSES AND GRASSLIKE PLANTS

I	#F		F	F			F		F		F	
2	A		B	C	D	E	F	G	H	I	J	K
3	Species		Total Height Inches	Height Remaining After Grazing (Inches)	Amount of Grazed Plants Used (Inches)	Per Cent of Grazed Plants Used	Per Cent of Plants Grazed	Ave. % Util. All Plants of Species in Types	Ratio by Weight %	Weighted Utilization Per Cent Culm and Leaves	% Species Makes Up to Total Volume of Forage Type	Weighted Average Utilization %
4					B-C	D-B		E F		HC CC HL- GL		
5	Agropyron	°C	23.2	2.5	20.7	89.3	70	62.51	.71	61.66	12	7.40
	spicatum	°L	7.4	2.5	4.9	66.2	90	59.58	.29			

#F - Data obtained in field
° C - Culm
° L - Leaf

Field clippings are made by principal species and placed in a container having a constant basal area (viz. a 1# coffee can) on both utilized and unutilized areas. The data may then be compiled at headquarters and the weighted utilization in per cent determined by species and type.

This method was tried out in comparison to the method suggested by Hill on this Forest last fall and for our type of range it was found that while the time element was slightly in favor of Hill's method, the data secured under the Lommasson method were so much more accurate and their value in scientific range so great that we are justified in using them on all of our principal types.

The method suggested by Hill has two fundamental weaknesses which briefly may be stated as follows:

1. The averages under captions (2) (3) and (5) are based upon estimates, that at best are not more than intelligent guesses, since few Forests have accurate data upon which an estimate of averages can be made.

2. To measure utilization on basis of height of plant or length of stem alone erroneously measures the total volume production of the plant and the amount of feed taken from the area would be measured inaccurately.

The method developed by Mr. Hill and the representatives of Range Management will be more accurate if the estimates under all captions are made in the current year and averages eliminated as brought out in the following comparison:

		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Wheatgrass	1928	17.5"	5"	30%	10"	60%	50	15%	30%
"	1929	17.5"	5"	30%	10"	60%	50	15%	30%

In the above comparison using the method outlined by Mr. Hill the same utilization of this plant is indicated for both years. No difference in the total volume of this plant is indicated between years. Supposing, however, that in 1928 wheat-grass attained an average height of 20" and 10" of the growth was left on the ground, the indicated utilization on basis of height in that year would be 50 per cent, then in 1929 wheatgrass attained an average height of but 15", 10" of which was left at the end of the season, the indicated utilization would then amount to 33-1/3 per cent. A difference in actual utilization between years of 17 per cent with the same amount left on the ground in each instance, although this difference would not become apparent in the method developed by the representatives of Range Management.

Lommasson's method largely eliminates estimates and develops the degree of utilization on a true scientific basis.

We recognize that the Hill method is a more orderly way of arriving at an estimate than has been practiced in the past, but we suggest that if these data are to be of value in range management practices that the more accurate method is none too good.

SONS OF MARTHA

By Robert W. Putnam, Fremont

"As a man thinketh, so is he." If this is so the western lumberjack is a distinct variety of Homo sapiens. He thinks stuff which no one else thinks and which having thought of wouldn't believe though in addition he subscribes to sundry doctrines common among other people.

Before Carlton Parker died he had a good deal to say about the idiosyncracies of the western laborer and the causes thereof in a book called "The Casual Laborer", and his theses were expanded by Kirkland into some very plausible arguments against destructive logging. These things are interesting reading-even if they are less clever by considerable than Jurgen. But lack of cleverness is no fault in academic treatises.

So much by way of foreword. This is no attempt at cleverness. I had an idea that by picking up wherever they appeared what seem to be fairly constant articles of the lumber jack's cerebral equipment some notion of his ideas might be gained. And so without further apology I append the progress so far made in his metaphysics in the form of one of Nathan's credos

1. That all Government employees are grafters,
2. That no stretch of the imagination can conceive of a Forest Service man as ever doing any work.
3. That the only work worth being done is done largely with the biceps and triceps.
4. That all rangers do is hang around sheep camps and eat.
5. That a knot on a tree will ten years hence be higher than it is now.
6. That white fir will never be any good.
7. That wood substitutes will one day so far usurp the price of wood that we will be using steel wool in mattresses.
8. That scented soaps are effeminate.
9. That their prowess in getting logs can best be discussed in town.

10. That camp cooks are always grouchy.

11. That the scaler is gyping them on the sale.

12. That the grub on the cookhouse table is bought by them.

13. That astuteness is best displayed by criticizing the doings of the boss.

14. That all bohunks, wops, dagos, kikes, coons, etc. are indescribably obtuse, and should be put down by law.

15. That the I.W.W went too far and through internal grafting put itself on the blink.

16. That Western Story, Ace High, the McFadden Magazines, etc. are to be condemned in public but read in private.

17. That while Lindbergh was unquestionably courageous there are numerous others who, given the same opportunity, would have done as well, and that cold nerve and high intelligence seldom go together and that Lindbergh's doings prove it.

18. That to call a man a good worker is to pay him a high compliment

19. That the cook is nefariously putting saltpeter in the grub.

20. That the bunkhouse next door is dirty and smells bad.

21. That spotted ticks carry spotted fever.

22. That a sheep herder is an unspeakable human and is usually wafty in the cronk.

23. That the local doctor is an idiot.

24. That if a man spits on the floor in camp he will do it at home also.

25. That Chinamen eat nothing but rice.

26. That the local moonshine is the worst they ever drank and contains all manner of foreign substances from methyl alcohol to nitrogen iodide.

27. That the job they just left paid ten dollars a day.

28. That the eggs served for breakfast in the cookhouse have been in storage for years.

29. That all Swedes chew "snoose" and can't get along without it

30. That chewing tobacco whitens the teeth and that pine gum does also.

31. That to say of a man "he means well" excuses all his shortcomings.

32. That bull pine and yellow pine are different species.

33. That folks prominent socially usually have defective morals.

34. That three drops of absinthe in an otherwise harmless drink will make one a maniac.

35. That a wine drunk is extraordinarily lasting.

36. That most bull cooks are a bit off.

LIGHTNING PROTECTION

By E. N. Munns, Washington

Lookouts exposed to the hazards of lightning on lonely mountains tops may be interested in knowing that the "cage" system of lightning conductors is just about as full protection from direct strokes on the house as it is possible to get. This system, which is now the Service Standard, consists of a band of conductive wire about the house under the eaves and about the base. together with pointed conductors which, striking up above the peak of the roof, follow down the ridges and the corners of the house into the ground. Of course the bands about the house are also grounded.

This cage system was first devised for protecting the Washington Monument. When the lower part of the Monument was built, four large iron columns were run down through the stone work into the permanent water. This served admirably as a lightning safeguard, but these iron columns were not extended upward when the upper two-thirds of the Monument was completed. It was not long before lightning strokes pulled out the mortar from some of the upper stones; and some of the cap stones were so cracked and loosened that they had to be bolted into place.

Then a group of physicists was called upon to devise a system of protection. An aluminum cap was installed and conductors were run down the sides of the Monument, encircling it many times in the descent. When the iron columns were reached, this cage system was tied into them and the protection was complete. (The ribbon conductors are embedded in the cracks between the stones so they do not show when one looks up from the ground.)

Since the installation of this system, the Monument, 555 feet in height and standing alone in the park, has been struck repeatedly, several times even in one storm. So perfect is the protection now that people in the building at the time of the strokes are unaware of the fact, and since the cage system was installed there has been no apparent loosening of stones or of mortar.

THE DERIVATION OF SHOSHONE

By J. N. Langworthy, Shoshone

There has been so much written about the meaning of Shoshone and so many conflicting ideas as to its derivation that R. W. Allen, formerly Supervisor of the Forest of that name, upon a recent trip visited the Indian Mission near Lander in an endeavor to secure reliable information on the subject. As a result of his visit, he prepared a memorandum from which I will quote:

"The following information was given me by Rev. John Roberts of the Mission near Lander. He wrote down for me the derivation of the name Shoshone and how it was corrupted or shortened to its present name.

Shont (or shaunt) Shon-nip.
Shont means "abundance or lots"
Shon-nip means grass.

This is shortened to Sho-shon-ne and finally to Shoshone.

The name of the Indian tribe arose through the fact that theey lived in grass houses.

The Arapahoes call them He-wuch-auau wuthe. This means
He-wuch - Grass
auau - House
wuthe - Inhabitants

Mr. Roberts also told of the legend or tribal lore of the Arapahoes that they "Came from the other earth over the frozen waters." There was up to thirty years ago a secret society among them which had retained this information and other similar lore. This society was perpetuated by a group of old men, not over two or three transmitting the religious and secret information to a sizable group of young men. Then when these young men had become old and only a few left, they in turn passed the information on to another group and it is in this way that the legend has come down to them that the race probably came from Asia via the Aleutian Islands to this country." - From D. 2 Bulletin.

MEN AND MANAGEMENT

"Integrity consists of the personal honesty of the individuals heading an organization. This virtue must be apparent in all dealings with customers, creditors, and most particularly with all employees. Otherwise full loyalty can not be developed.

"Many employees get their greatest kick out of life in seeing results. Their interest in pay day, quitting time and Sunday is a secondary consideration. These are the key men in an organization. The wise manager seeks them out, gives them responsibilities and makes sure that they are provided with opportunities to experience that glow which comes from a sense of accomplishment.

"The careless, inefficient man can work only a limited length of time in an organization without infecting it. For a short period the loss may be confined to his own inefficiencies. If he is allowed to hold on too long the key men are bound to feel that the management lack discrimination. Then the character of their effort suffers.

"A manager can not place responsibility on the shoulders of a subordinate and still interfere in details. Such procedure causes demoralization and tends to turn a man with initiative into one who will only execute orders.

"Once confidence has been expressed in a key man one should not be easily convinced of his inability. It is a peculiar thing that the executive will nearly always be assailed by doubts as to whether a subordinate will carry new responsibilities through successfully. Keep these doubts to yourself. Show confidence and render assistance and in most cases the subordinate will pull through splendidly."

(Editorial in "The Constructor", August, 1929). - Submitted by D. 6.

YE EDITOR DISCOVERS

The Nineteenth Annual Convention of the National Drainage, Conservation, and Flood Control Congress, held in St. Louis February 20-22, in which 15 or more States and the Federal Government were represented, adopted the following as one of its resolutions:

"Resolved, that we recognize the economic waste to the country of the rapidly increasing area of deforested lands, a great proportion of which lands are unsuited to other purposes than forest growth and must remain idle unless put to service in the reproduction of much-needed commercial timber; and we express our commendation of the progressive policy of the National Government in its encouragement of reforestation in the States of the Union; and we urgently recommend to the States the great importance in the public interest of the enactment of all such legislation, constitutional and statutory, calculated to provide necessary encouragement to constructive reforestation plans wherever the reproduction of the Nation's essential timber supply may be advanced. We recognize the possibilities of forestation as a factor in water conservation and steam regulation, and commend the investigations of the Government in this direction."

- - - - - - - -

Arrangements are being made for an Inter-American Conference on Agriculture, Forestry, and Animal Industry, to be held at Washington, September 8-20, 1930. Leon M. Estabrook, who for the last five years has been in charge of the World Census of Agriculture, with headquarters at Rome, has returned to Washington and will assist Dr. A. F. Woods, Director of Scientific Work in the Department of Agriculture, in arranging with the Department of State and the Pan-American Union for this conference.

The conference is the outgrowth of recommendations of the Sixth International Conference of American States, held at Havana in 1928. The purpose of the conference is to consider plant and animal production, and to develop plans for all phases of agricultural cooperation. Each nation in North, Central, and South America will be asked to send an official delegate as well as other delegates who are specialists in agricultural production and marketing. The conference will come one week ahead of the Sixth International Road Congress, and it is expected that many of the delegztes will attend both conferences.

- - - - - - - -

Hearings on the Englebright Bill were held on March 10-12-13. Representative Englebright has given a great deal of time to steering his bill through the troubled financial waters, and he and Mr. Show made excellent presentation before the Committee, although the time taken on other matters seriously handicapped both Mr. Englebright and Mr. Show.

- - - - - - - -

The publication of the Personnel Classification Board's report on field classification is held up because the money required for this work is included in the first deficiency bill which has not yet passed. Pooler and other men in the Service and Department can not get any effective action on the subject of field classification until this report is out. Pooler is doing everything that can be done in a preliminary way.

- - - - - - - -

"The Extension Forester," a new mimeographed publication issued by the Office of Cooperative Extension Work has made its bow in the field of forestry periodicals. This new house organ is intended to stimulate greater interest in farm forestry extension and to keep Extension people up to date in regard to methods and results of adult and 4-H Club demonstrational work. The bulletin will be published quarterly and sent to Extension Directors, Extension Foresters, and State 4-H Club leaders. Two issues have appeared thus far, edited by W. K. Williams, Extension Forester, U. S. Department of Agriculture.

- - - - - - - -

It has come to our attention that there still exists an undistributed stock of Department of Agriculture Bulletin 969 "The Mexican whorled milkweed, Asclepias mexicana, as a poisonous plant," by C. Dwight Marsh and A. B. Clawson, Bureau of Animal Industry, 1921, probably sufficient to supply all Forest officers and permittees who are interested and who have not yet obtained personal copies of this publication. Forest officers interested in obtaining copies of this bulletin should order their copies in the near future.

Mexican whorled milkweed is a rather important sheep-poisoning weed in California and Nevada, but is fairly common also in parts of the five westermost States and also in (mostly western) Arizona. The bulletin has interest, therefore, in all western Districts of the Forest Service except perhaps 2 and 8.

- - - - - - - -

Assistant District Forester M. W. Thompson of District 2 is in Washington on a detail of several weeks to the Office of Forest Management in connection with working up a large pulp sale of over 2 billion feet on the San Juan and Rio Grande Forests.

GOVERNMENT OF URUGUAY IS LARGE

BUYER OF U. S. MOVIES

The largest single order ever received by the U. S. Department of Agriculture from a foreign government for agricultural movies has just come from Uruguay. The request is for 136 of the Department's educational motion pictures.

The films ordered cover a wide variety of subjects, from fighting insect pests and forest fires to an appealing film on spring and summer wild flowers. Included in the list were the Forest Service reels THE FOREST AND WEALTH and THAT BRUSH FIRE.

The Department has authorized the Government of Uruguay to purchase copies of these films at contract prices.

WOOD INSTEAD OF GASOLINE

Two brothers in Stockholm, named Widegren have perfected a "Wood Gas" generator which produces satisfactory motor fuel from any kind of dry wood. It is only necessary to grind the wood into chips, as is done in the manufacture of paper. From these is derived a gas that will drive the ordinary type of motor as well as gasoline.

During the autumn maneuvers of the Swedish army, a 5½-ton truck driven by one of these wood gas generators attracted much interest and gave a creditable account of itself in every emergency.

This heavy truck made a trip of 144 miles in seven hours, or an average speed of 20 miles per hour. It used in all 297 lbs. of wood fuel. A similar truck used nearly 13 gallon of gas, on the trip, which would cost $4 in Sweden. The chips from offal wood cost but 80 cents, hence the fuel saving was 80% and naturally aroused great enthusiasm in a country where forestry is a predominant industry and oil or gas wells are absent.

Wood chips, pound for pound, have less than half the volume that charcoal has. They can be made from material that is not an absolute waste in the forest and factory. It is estimated that such dry wood chips as are used to generate this gas can be put on the market for $5.50 per ton. If the rosy hopes entertained for this type of motor fuel can be realized, it will be the dawn of a glorious day for forestry. The low grades, small sizes and offal can all be expected to yield some return instead of being a millstone to be carried by high-priced forest products. Hence it is probable that everybody would get cheaper building material, if wood-gas for motor fuel should come into general use and stimulate closer profitable utilization in the lumber industry.

— Geo. S. Perry
Pa. Dept. of Forests & Waters "Service Letter"

TENT CATERPILLARS ON THE CARSON

Tent caterpillars covering a section on the Carson in 1925 now are found on an area of approximately 225 sections, according to a report submitted by Ranger Wang. Caterpillars emerge from the eggs, laid in masses on small branches of bushes or trees, from the 15th to the 25th of June. On emerging, they group and start building a tent which is completed in six to eight days. They then migrate. This is their most destructive period. After two or three weeks feeding or migrating, the caterpillar enters the cocoon or pupa stage. This stage occupies about 15 days. The adult, a stout grayish brown moth, with two rather narrow light gray strips on the wings, emerges, and in three to five weeks the egg masses are found, completing the cycle the insect over-winters in the egg stage.-

The most destructive enemy appears to be parasites. On the Carson, the chief food is the aspen, but it also feeds on willows, cottonwoods, and oak, and oak is the only species killed, and that only to a limited extent. Increment borings on aspen show that defoliation for five years has had little effect on growth. The aspen after being defoliated puts out a new crop of leaves about 2/3 the size of the original. - District 3.

Believe It or Not. (apologies to Ripley) _ _ _ _ and then there is the ranger who in order to follow his work plan which calls for 15 days annual leave in December, requests the same although his address will be at his ranger station and he will carry on as if he were to take no leave. - D. 6 Bulletin

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIV No. 13 WASHINGTON, D. C. MARCH 31, 1930

THE WENATCHEE WATERSHED HEARING

By C. E. Rachford, Washington

In early January of this year a letter was received by Secretary Hyde, accompanied by a number of resolutions and petitions of various agricultural interests using waters derived from watersheds lying wholly or partially within the Wenatchee National Forest, to the effect that their water supply was being diminished and its source injured by overgrazing. Request was made that they be given an opportunity to present their views before representatives of the Department of Agriculture, preferably sometime during the first half of February.

Mr. Sherman was authorized by Acting Secretary Dunlap to conduct a hearing at Wenatchee, Washington, from February 10 to 15.

The testimony furnished ample proof of the wisdom exercised by the Federal Government in establishing the Wenatchee National Forest and maintaining it at public expense for the past 23 years. It focused attention on the enormous values which are dependent on a regular, constant, and maximum streamflow. It brought out the value of the summer range to one of the leading industries of the State. It advertised to those in attendance the potential timber-producing power of the national property and the fact that from it might be drawn a plentiful supply of timber not only for local needs but for industrial purposes.

That this could be done on a basis of continuous conservative cutting not only without material injury to the efficiency of the forest cover as a watershed but actually to its betterment, was clearly set forth. The desirability, from the standpoint of sound economics, of making the National Forest contribute to the largest possible production of wealth in the form of red apples, lambs and wool, fish and game, lumber and other forest products (including recreation), was brought out. Of course this production of any interest and activity cannot be permitted if made at still greater expense or loss to some other class of users.

In the early part of the hearing the local interests showed a tendency to hold the Forest Service accountable for lands outside the National Forest and for all cases of misuse of roads or trails by sheep, even on county roads outside the Forest boundaries. After it had been made clear that the Forest Service has no control over such roads and that direct authority and responsibility rest with their own officials, some of the witnesses fairly and frankly admitted that they realized they had brought their complaint to the wrong court.

A more general use of trucks for the transportation of sheep to and from National Forest ranges is now anticipated.

District Forester C. J. Buck of Portland showed that during the past few years the Federal Government has acquired about 41,000 acres of privately owned lands in the Wenatchee National Forest at a cost of over $134,000, and that these lands are now being given the same protection and conservative management that is accorded lands originally reserved from the public domain.

Forest Supervisor Sylvester showed that during the past five years the Federal Government has expended on account of the Wenatchee Forest a total of about $670,000 more than it has secured in receipts from this Forest.

Assistant District Forester Fred H. Brundage of Portland explained the hazards incident to protecting from fire a range from which stock are entirely excluded. He cited the experience of the Service on the Chelan National Forest where during the past fire season a fire started on a part of the Forest from which stock had been excluded at the request of the water users of the Manson irrigation district. Before it was brought under final control this fire swept over a total area of 58,000 acres of National Forest land. To extinguish this fire it cost the Federal Government more than $90.000 in money, as well as the lives of three men, one a veteran scientist. It cost the Manson irrigation district nearly $200,000 to replace the flume line which had been swept away, and the irrigationists are now facing the future with a badly burned watershed. Consideration was given to the problem of whether or not conservative cutting could be allowed on the watershed without undue injury.

After a full consideration of Mr. Sherman's report, based upon the facts brought out at the hearing and in the written statements subsequently presented, the Secretary has reached the following conclusions:

1. That the decrease in flow from the watersheds of the Wenatchee National Forest is due to a cycle of dry years.

2. That this is a general condition prevailing throughout the Northwest due to a general cause, and not a local and exceptional condition due to a local and exceptional cause.

3. That there is no general overgrazing of the Wenatchee National Forest by domestic stock and no evidence to indicate that the supply of water has been diminished thereby to any measurable or perceptible degree.

4. That while damage to the range was not general and not sufficient to have measurable effect upon streamflow, there is urgent need for sheep owners to assume more responsibility in the handling of their sheep on the range Damage must be eliminated or reduced to the minimum.

5. That the exclusion of domestic stock from the range would subject the watersheds to increased risk of injury by fire and would, as shown by costly lessons elsewhere, be contrary to the best interests of the petitioners.

6. That there has been some pollution of the domestic water supply which the City of Leavenworth draws from Icicle Creek and some decrease in palatability probably due to trailing sheep into the watershed.

7. That the watersheds have not been injured by Forest Service timber sales.

8. That a large share of local dissatisfaction was due to the misuse of lands not in Government ownership or control and to the misuse of public highways over which county and State officers have complete jurisdiction.

9. That there is urgent need for closer cooperation among the various parties participating in the benefits and influences of the watersheds in the National Forest and that the water users should organize for the specific purpose of direct participation in

the work of fire prevention and control.

Mr. Sherman's report makes a number of suggestions for constructive action upon the part of water users and others interested in the protection of the Wenatchee National Forest. The report indicates that local Forest officers are in the best position to work out any changes required to meet existing or changing conditions.

The following three conclusions were reached by the District Forester at Portland after consultation with Supervisor Sylvester:

1. Owing to the drought the number of sheep allowed on the Wenatchee National Forest in 1930 will not exceed 90 per cent of the number actually grazed last year.

2. Special attention will be given to the trailing of sheep into the Icicle Creek watershed to avoid pollution. An allotment of $300 will be expended in fencing trailing stock back from the stream at critical points.

3. Cooperation in watershed protection, particularly from fire, will be urged upon all interested parties.

The hearing will be followed by an inspection of the watershed the coming summer by Forest officers and representatives of the various interests.

DIGESTING OUR FIRE SUPPRESSION IDEAS

By Henry L. Spencer, Gunnison

Through the courtesy of District 1 it has been my privilege to read four lively articles in the "Northern District News" issues of October 10 to January 20, dealing with the fire suppression problem of the Northwest. The discussion is sharply divided on the power pump idea - excepting the January 20 article "BIG FIRES - SHOCK TROOPS" by Girard, in which apparently the pump issue is intentionally ignored, notwithstanding the fact that the article deals directly with the technique in handling a big fire with a total perimeter of twelve miles!

It is difficult to make quotations from articles and accurately convey the authors' viewpoint, but from the fusion of the good in each is to be derived an advancement in fire suppression; so quotations will be used. Let's start with Sandvig's "THE PRO SIDE OF THE PUMP ARGUMENT" in the October 10 issue:

"The power pump is making gradual inroads everywhere upon our friends the 'hoe-dag' and shovel --- but there still persists in some quarters an inborn prejudice to this aid to efficiency. ------- The day cannot be far off when the use of a pump will be required in taking initial action on the great majority of fires and every ranger station will be equipped with one."

White's article "A KNOCK IN THE PUMP'S MOTOR" in the November 30 issue:

"Most of us after we have had all our faith pinned to a trench for years, get quite excited when we rediscover that water applied to flames has a profound quenching effect. If the instrument used in getting water on the fire happens to be a pump, we may at first want to throw away all other tools and just use the pump. The potency of magic belongs to the water rather than to the carrier. Water poured from a bucket has the same properties. ------- I must confess that to date the use of a pump has more often hindered than helped me in the suppression of fire. This is my fault - not the pump's - but it does not argue well for the throwing away of other tools. --- A lot of line has been held with water delivered in canvas water buckets by a few men and distributed with tin cans, with far better results than the same crew could have attained with a pump."

Girard's comeback to Sandvig - "BEARING A TORCH TO SANDVIG" in the December 10 issue:-

The underscoring of "big fires" is my own.

"In the November 10 issue of the Northern District News, comrade Sandvig forecasts the end of the "shovel, hoe-dag and axe," predicting that these will be supplanted by the power pump. ------ Pumps can be used effectively on *some* small fires - made to order - that can be reached quickly by auto truck. They are no good - only in the way - on *big fires*, where you have to move them (and a few thousand feet of hose) around on pack mules. On *big fires* there are too many sectors where there is no water: and too many sectors where there *is water*, but it can't be reached with pump and hose until a pack trail is made. And by the time that is done the fire has moved over into the next township. On most *big fires* pumps are as useless as windshields on billygoats!"

Since, as has been stated, Girard's BIG FIRES - SHOCK TROOPS article in the January 20 issue ignores the water question no quotation is made. The title of the article, however, "BIG FIRES-SHOCK TROOPS" I wish to use as a barometer indicating rather accurately, I believe, the outlet of the major portion of the brain power, man power, and money power devoted to the fire problem in the Northwest. We are thinking in terms of *big fires* - the major portion of our fire money is expended on big fires, and after the smoke clears away both money and forests are gone! Let us narrow our discussion down to small fires, and devote every atom of brain power and inventive genius with the consequent funds necessary, to hitting the small fire on the nose and putting it out! I am firmly convinced that when we expend one half the brain power and one quarter of the money power expended in fire suppression in the Northwest the past season, in concentration on the small fires problem, and how to prevent them from becoming *big fires*, we will have effectually disposed of the big fire complex. To return to the digest of the articles quoted: White's article more nearly expresses the happy medium through which we must hit the small fire on the nose - yet what is needed above all else is the perfection of ways and means to *put small fires out in the least possible time* - not establishing a fire line and waiting for the fire to burn out, but an aggressive attack with water in the most available manner, be it pumps water buckets, horse pack containers, or the cook's kitchen buckets. When we reach this point we can confidently expect rapid reduction in the number of big fires.

I wish to state just how I would employ Girard, Sandvig, and White on a fire. It would be nothing more or less than the fusion of the ideas of all three - as expressed in their contribution articles. Girard with a full complement of hoe-dags, shovels, and axes to put a trench around the fire; Sandvig with a pump on each shoulder if pumps were available; and White with a follow-up of canvas water buckets and tomato cans! In my estimation a trench around any fire is the first move when the fire can spread easily via the ground cover. Then would come Sandvig with his pump crew, if a pump chance were available; to systematically beat back the hot spots first, then to close in from the fire line methodically, digging into the deep duff fire, under and over the burning down timber-it is simply amazing to note the rapidity and ease with which a hot front can be reduced to the coolness which would permit White with his water buckets and tin cans to follow up and completely extinguish any remaining fire. The pump opens the way for the convenient use of water by the hand method in conjunction with the nozzle. And indeed there are frequent cases where the front is being pushed along by a breeze and Sandvig and his pump would be the only means of establishing the line. In one such instance in my experience the fire line was established after the pump had made it possible for the trench crew to get close enough to establish an effective trench.

It is entirely possible to foresee many fires with water chances, where trenches are superfluous and unnecessary with a pump on the ground. This will come with the development of pump use and the technique of using them. But I must get back to the fire where there is no pump chance! Girard with his trenchers would have the stage only until the fire was trenched, then the water brigade under Sandvig and White would attack the enemy, each man armed with a four gallon-reinforced bottom canvas water bucket and a tomato can! The water would be packed to the fire line on pack stock and there drawn off in waterbags or buckets to be used as needed by the pourers. As stated in a previous article, the use of water on forest fires has been an invariable and hard-boiled rule with me in 20 years of fighting forest fires - and as invariable have the results been positive.

Against all odds I would say the pump has come to stay and its definite place in fire fighting will be established before another season passes. And with it must come the definite place the hand application of water deserves in successfully extinguishing the many fires which annually start in our forests.

And say! I have a young bomb shell which shall be entitled "The Fire Conscience of the Forest Service" to turn loose just prior to the opening of the fire season. It is something we do not like to talk about, but I believe the Bulletin is big enough to publish it and that the men of the Service are big enough to digest it.

PULPWOOD SALE ADVERTIZED BY RIO GRANDE AND SAN JUAN FORESTS

The Forester has authorized the advertisement of timber on two units, one on the Rio Grande National Forest and the other on the San Juan National Forest, in the Engelmann spruce type of Colorado. This offering is in response to an application from a responsible paper manufacturer for a pulpwood supply sufficient to furnish a cut of at least 100,000 cords a year for a long period. The combined units are estimated to yield slightly over two million cords of pulpwood species chiefly Engelmann spruce, but with some blue spruce, white fir, and alpine fir in the mixture. The taking of relatively small amounts of Douglas fir, western yellow pine, limber pine, and bristlecone pine within the sale areas will be optional with the purchaser or purchasers, except as the successful bidder or bidders may have agreed as part of the bid to take all or specified portions of this optional material.

The advertisement specifies that no bids will be considered of less than $1 per cord for the pulpwood species on the Rio Grande unit, or of less than 75¢ per cord for the pulpwood species on the San Juan unit. Bids for material of the pulpwood species taken out in the form of sawlogs must be per M feet at least twice the rate paid per cord for pulpwood.

The applicant evidently believes that the Forest Service estimates are low rather than high. He asked for, and was granted, a provision in the sample contract under which if the purchaser has complied with the terms of the sale and at the termination of the sale after thirty years the entire sale area has not been cut over, an extension of time sufficient to enable him to cut over the remaining area under the provisions of the contract will automatically be granted. The two units are to be handled under separate contracts, each with a maximum rate of cut equivalent to the estimated yield for the working circle and with a minimum rate of cutting required in order that operations may be practically continuous.

Each contract carries a reservation of additional timber amounting to as much or more than the quantity now offered for sale. The customary reservation clause is used. It is also expected that any pulpwood operator will be able to obtain considerable quantities of pulpwood from other operators in Colorado or adjacent regions to be produced at least partly in connection with sawlog, tie, or mining timber operations in which the spruces and true firs are not now regarded with favor. If the project actually develops and such a pulpwood market is established in the region, the opportunities for better silvicultural practices in the Central Rocky Mountains will be greatly improved. - E. E. C.

YE EDITOR DISCOVERS

Club Secretaries from some 700 motor clubs of the American Automobile Association, meeting for their annual conference in Washington March 19-22, were given a new insight into the work of the Forest Service and the possibilities of cooperation between the Service and the AAA motor clubs throughout the country. Major R. Y. Stuart addressed the conference on "The National Forests and Their Use by the Public" during the session, pointing out the fundamental interest of all citizens and especially of motorists in the protection, development, and promulgation of wise use of the National Forests. He stressed the value of forest roads and trails both as an agency of protection and as a means of increasing the opportunities for public use of the Forests.

Several members of the Branch of Public Relations in Washington attended some of the group conferences during the AAA meeting, where the advantages of participation by motor clubs in civic activities, including the promotion of forestry and fire protection were discussed.

The American Automobile Association has given useful and willing cooperation to the Forest Service, both through its national organization and through many of the local motor clubs. Opportunities for expanding this cooperation are by no means exhausted.

- - - - -

The Charles Lathrop Pack Forest Education Board, founded by the Charles Lathrop Pack Forestry Trust, is offering a number of fellowships in forestry for the year 1930-31. Six to eight fellowships are available.

Applications for fellowships must be made in writing on or before April 15, 1930, to the Secretary of the Charles Lathrop Pack Forest Education Board, 1214 Sixteenth Street N. W., Washington, D. C.

- - - - -

Preparation of the library cards for the North American Forestry Bibliography has very largely been completed. There remains yet the task of checking many of these references and of subdividing them into different subject headings. It is planned to send out to selected localities where forestry libraries are maintained and to individuals acquainted with the specialized field of forestry the cards for particular subjects, so that references pertaining to forestry data may be as complete as possible.

- - - - -

The annual program conference will be held at the Forest Products Laboratory for about two weeks beginning April 21. At this meeting the program of the Forest Survey, now being started in the Pacific Northwest, and the development of economic studies will be discussed. Programs of various Experiment Stations and the Laboratory will also be reviewed

- - - - -

H. T. Gisborne of the Northern Rocky Mountain Experiment Station is in Washington on detail preparing plans for future forest fire research. The committee, consisting of a number of representatives from the Experiment Stations and Laboratory, will review critically the fire studies under way throughout the United States and endeavor to lay plans for future developments.

- - - - -

Donald Bruce has returned to the Forest Service effective March 15 for an extended assignment to the Office of Forest Measurements.

- - - - -

Lester Reineke of the Office of Forest Measurements has been temporarily assigned to the California Forest Experiment Station, where he will work for a few months upon some growth and yield problems.

EAST IS EAST AND WEST IS WEST

It has been said that no two people ever see the same thing alike. Here is a good example of this where two Rainier Rangers write of the life, services, and passing of "Tom," a Forest Service pack mule. - J. D. G.

Obituary. Sad to relate, one Tom, a mule grown rheumatic and weary with life, his ears withered by the blistering sun, his lifeblood drained by the Eastside fever tick, his appetite and disposition ruined by pine needle rations and associations with calloused packers, peacefully gave up the ghost November 21. During the summer we did all in our power to bring back the light in Tom's eye. Due to kind treatment, clean saddle blankets, and real grass, Tom managed to survive the fire season. His brooding disposition, however, at the beginning of the inactive season, away from our gentle ministrations, could not erase the picture of steep Indian trails, scorched pine grass, and the jangle of silver-mounted spurs. - Fred Hornquist.

Gone to His Reward Tom, who has gained a Forest-wide reputation, both good and bad, mostly bad I fear, as he knew all the tricks of an ornery pack mule, and on the least provocation would turn them loose, spent a number of years in the Naches pack string and has carried many a heavy load over the sage-covered hills, and, although he acted like a small boy who was compelled to bring in the wood for morning, he was happy and enjoyed life. What mattered if he and his mates had to carry a heavy pack over the hills all day? They knew when camp was made in the evening, they were sure of a good roll in the sage and all the good, sweet grass they could eat - who could ask for more? Then hard luck hit Tom with a bang! He was transferred to the West Side, and while he carried his pack faithfully all summer there was an uncomfortable feeling he could not explain and had no time to analyze. But in the fall when he was placed in winter pasture he would dream of the happy days of the past and crave the smell of the sage and a taste of the sweet dry grass, free from fern and fog. He would stand aside and watch the other mules plunge their heads in the fog-wet ferns and eat the grass, if any, underneath, and well do I know the feeling - it is like eating "Slum" in the Army; one had to drink too much water for what little he got to eat. Well, all this was too much for Tom to understand and the ache in his heart was too great to overcome and he died of a broken heart. If the hereafter was properly planned there will be sage-covered hills in mule heaven, and here's hoping Tom has gone to his reward and is knee-deep in sage and sweet dry grass, and will never see a fern nor smell that musty odor caused from the ever prevailing fog! - Arnold Arneson

RESTORATION OF THE WOODLOT

"Most people think of a reforestation program along the lines of large areas, commonly accepted in terms of the future timber supply, but there is another kind of reforestation that is equally important - in fact, more important to agriculture - and that is the restoration of the so-called 'woodlot.' In the past the woodlot has played an important part in the prosperity of a large percentage of our farmers. It has furnished shade for livestock in summer and shelter in winter, posts for fences, firewood for the house, and in other ways been useful to the farmer.

"In many areas this woodlot is disappearing. Why not restore it? In doing so we would only be following the example of many of the older nations that in the past have had to meet a similar situation as that now confronting us. If every American farmer were to devote five per cent of his present acreage to this form of reforestation he would have gone a long way toward meeting the problem of excess production and at the same time have added materially to the future value of his farm.

"The different States have a very important part to play if any campaign to restore the woodlot to the American farm is to be successful. That is in the matter of taxation. Some States have already passed legislation exempting from taxation land that is planted for the purpose of reforestation. Other States should do so, being specific to make such exemption apply to the woodlot as well as land planted to timber on a strictly commercial basis.

"Reforestation and more and better pastures offer a sound long time program for getting our poorer acres out of surplus production."--Chairman Legge of the Fed. Farm Board in radio talk over NBC Co. network

HOW THE TIMES CHANGE

Until the past year, District Eight's itemized estimates of allotment needs from the Land Classification, Exchange and Entry Survey appropriation always bulked large in marine items, boat hire or repair, skipper's salary, oil, gas, etc. One could picture the hardy sea-dogs braving the tumultuous waves en route to satisfy some old sour-dough's ambition to have and to hold a piece of soil that was his very own. But sad days have come upon "Seward's Folly." The estimates this year contain no provisions for boats or boatmen but they do include an item for automobile hire. It must be this new Commission that's responsible for this decadence. - L. F. K.

- - - - -

The objective of constructive publicity is or should be to build up a working relationship with the public that will further understanding and good will, that will lead to appreciation of your honesty and sincerity of purpose and of the value of the service you are performing.

- - - - -

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

Vol. XIV No. 14 Washington, D. C. April 7,1930

BREAKFAST ON THE WICHITA

By Charles Allen

Johnnie Squirrel jumped out of the tree and frisked his tail in the sunshine. Breakfast time and none in sight. Perplexing. He stood up on his muscular hind legs. A round head bobbed in all directions, while keen little eyes searched everywhere for something to eat. Unsuccessful, but in no wise discouraged. His gray cloaked body and attractive tail jerked with snappy energy, while his appetite called for more action. On all fours he ran about searching eagerly for food. No success.

Some wild turkeys were fed from a convenient sack of grain and the squirrel scampered back to his tree. When the distributor of breakfast returned to office porch Mr. Squirrel considered the coast clear of humans, at least, and, deciding to take a chance with the aggressive and greedy birds, returned cautiously to the ground. With short jumps and energetic jerks of bushy tail, he approached the feeding turkeys. Close up he stopped, stood on his hind legs, and with fetching audacity looked on.

"They're too busy to notice me," he must have somehow reasoned. "I'll just scamper right in and help myself." He made a few quick, bold jumps, grabbed up a kernel of grain and dashed back to the neutral zone. Standing erect, the small morsel of food was taken from mouth with front feet, examined reflectively, then returned to his sharp and efficient teeth. Industriously he chewed for a moment. Pretty good. He'd have some more. But breakfast was rapidly disappearing and a beautifully clothed old gobbler had something to say on the subject. When Mr. Squirrel started for another kernel, Mr. Gobbler made a dash at him with neck stretched out and spread wings wickedly flapping the air.

Johnnie Squirrel wasted no time in getting back to his tree. But- life is dependent on nourishment and the urge was strong. Again he came down from the tree. Undoubtedly he'd seen the pail of grain taken from that sack on the office porch. At least he was determined to investigate. Cautiously making his way to the building he jumped up on the porch and looked curiously at the sack of grain. He who observed stood close to the door. Mr. Squirrel decided to ask the waiter to bring on his order. To make the request more emphatic he approached the door, put his front feet on the screen and peered inside. The implied request came with two or three emphatic jerks of saucy little head. Of course his command could be nothing short of "Breakfast food might do, but I'd like nuts better." When a move was made to obey his command, the tree dweller retired.

Some nuts were placed in a bucket. The wild turkeys had by this time cleaned up their breakfast and stood expectantly waiting for more. The pail was emptied and waiter stepped back to office porch. Ensued an aggressive rush from wild turkeys. A surprise party in store. The attractive birds turned to business of strutting and gobble, gobble, gobbling.

Mr. Squirrel came out and had his breakfast.

JUDGING UTILIZATION OF NATIONAL FOREST RANGES

By A. R. Standing, D. 4

Reference is made to an article by R. R. Hill under the above title in the January 20 issue of the Service Bulletin. The article is an attempt to accomplish what anyone interested in range management wishes to see accomplished - the finding of a better way of estimating range utilization.

In his discussion, Mr. Hill made the statement, "If a range unit has highly palatable plants growing in mixture with plants that are grazed but lightly until the best plants are taken, good management requires that grazing use stop when the choice plants are moderately grazed."

This is true in certain plant associations, but there are situations where the statement would not depict good range management. There are plant associations in which occur a small percentage of exceptionally palatable species along with a relatively large volume of plants of better than average palatability. Mr. Hill's statement, unless modified, would imply that after the one or two per cent of "ice cream" plants are taken grazing should stop, whereas it is obvious they should be sacrificed, if necessary, to obtain reasonable use of the bulk of the forage.

There are some features involved in the application of the formula that do not seem wholly practicable, which may be because we do not fully understand its operation. In order to apply the formula it would be necessary to determine the most important plant species, the height of each in average years, the amount of each that should be taken or left, and the percentage each makes up of the total plant cover. In District 4 this could not be done with sufficient accuracy for large areas, such as the average sheep allotment. There are plant types of many kinds and sizes, differing considerably in density and composition, and they are all intermixed. One could not determine the percentage of the total plant cover certain plant species make up of several of these types lumped together with sufficient accuracy for the requirements of the formula. It would be necessary to work up the data for the numerous small types, and the work would have to be done by some one especially well qualified to obtain the data. This would require as much work as a grazing survey, unless typical types could be selected for study on which data could be gathered year after year that would be representative of the area as a whole. There would still be considerable work involved in getting the fundamental data necessary before the method could be used by the field personnel at large.

In using the formula, the Ranger would have to inspect the small types and obtain the data for each, and then average the data for the various types to arrive at the degree of utilization on the allotment or unit as a whole, giving due weight to the different sizes of the types and the different densities of the types. Whether or not this is too much to expect of the average Ranger is a question.

Another difficulty is finding the illusive average year. Figures compiled by the Great Basin Experiment Station from records kept over a six-year period show large variations between percentage of volume produced compared to an average for the period by the same species in the same year at different elevations and in different sites, between different species in the same zone and site, and between the same species in different years. For example, in 1924 the volume of growth of brome grass was 58 per cent of an average for the six years in zone one, 50 per cent of average in zone two, and 80 per cent of average in zone three. At the same time several weed species were 65 per cent in zone one, 9 per cent in zone two, and 86 per cent in zone three. In 1925 brome was 96, 145 and 114 per cent of average by zones, while weeds were 66, 35 and 113 per cent. In 1926 brome was 85, 74 and 66 per cent and weeds 46, 14 and 47 per cent, and so on.

On the same plots in 1927, brome was 114 per cent of average, while wheat-grass was 105 per cent. In 1928 brome was 115 per cent and wheatgrass was 57 per cent, and in 1929 brome was 102 and wheatgrass 123 per cent.

What is an average year for one region, or part of a region, is not for another. Few, indeed, are the places where sufficiently accurate data are being obtained to determine average years and the degree of variation from them. Then, too, we never know if a season is average until it has passed and the data concerning it have been compiled.

The formula as now constituted assumes there is a direct ratio of height to volume. This is not always true, for on many plants there is a greater growth of leafage and stems near the base, and leaving half the height means leaving more than half the volume. One species may have two-thirds of its volume in the lower half of its height and another three-fourths. Livestock do not crop the different species down to uniform heights, but take most of some plants, parts of others, the side out of one clump, the tip of another, half of another, and so forth, which further complicates the system.

In using the formula, the height of growth left for each species studied is determined by the Ranger and the percentage these figures are of the height that should be left under proper utilization average years is worked out in arriving at the utilization for the current year. It is then necessary to make an adjustment by applying a correction factor to account for the variation of growth the current year from average. This correction factor is the "per cent current forage is above (+) or below (-) normal." Without this correction factor the formula cannot be used, and the answer obtained from use of the formula is no more accurate than the correction factor applied. Until machinery can be put into operation that will give reliable data on the per cent of yearly variation in volume of plant growth above or below average by units as small as those on which the utilization data are gathered, the formula cannot be used.

The use of the formula has not been tested in the field in District 4. Actual trial may clear up some of the above points, or may bring out ways in which the method can be modified and made usable. It is hoped this can be accomplished.

WORDS, NOT DEEDS

Someone ought to explain this one: While we were celebrating our 25 years of achievement, the Macon (Ga.) News announted the fact with the following headline:

QUARTER CENTURY
OF CONVERSATION
IN FOREST WORK

Perhaps it is no coincidence that the megaphone is shaped like a treetop, was one comment. Or perhaps Macon is giving us a gentle hint to stop talking and get to work.

WARD SHEPARD LEAVES FOREST SERVICE FOR "G. P."

By Herbert A. Smith, Washington

Ward Shepard has resigned from the Forest Service, effective April 1, in order to accept an offer of association with Governor Pinchot in work for the advancement of the forestry movement.

That the undertaking is one of strong appeal for a man deeply interested in the public policy aspects of forestry, as Shepard has shown himself to be, must be manifest to all. And it is one for which he has exceptional qualifications. While we regret greatly to lose Ward, he will go to his new association and work with the hearty Godspeed of his many friends throughout the Forest Service and with full recognition that an opening has come to him of a kind scarcely to leave room for choice.

Nevertheless, we can be sure that leaving the Service will mean a big wrench for him. It is not merely that he has been in it and of it for a considerable term of years; not merely that he entered it immediately after graduation from the Harvard Forest School and has never since been on any other payroll. The Forest Service has provided him, along with a job, something equally essential, at least to people built like Ward - a worth-while cause, big enough to command all his loyalty and to call for the exercise of all his powers.

Years ago it was told the writer that District 3 had made a real find. Somebody had discovered a young Ranger located on an isolated district off in the hills and more or less forgotten, who had developed conspicuous competence and promise in his performance of the Ranger's task. And that was in the days when the Ranger was supposed to work primarily with the hands, legs, and back rather than the head.

That the period of apprenticeship was long enough for a thorough grounding in the primary functioning of National Forest administration while not so long as to constitute a wasteful employment of a good man in a position which he had plainly outgrown, the record itself evidences fairly well. Shepard was appointed as a Forest Assistant July 1, 1913, and assigned to the Datil. Nine months later he became Assistant Forest Ranger, and in January, 1916, Forest Ranger. Another year and he was taken into the District office, as Forest Examiner.

Up to that time he had served on the Datil, the Apache, and the Tonto. The next three years were given mainly to Operation activities. With the organization, late in 1919, of Public Relations activities as a regular District line of work (though not then under the name of "Public Relations"), he was placed in charge of this unit. But a few months later he sought and obtained a Supervisorship, to broaden further his field experience, and took over the Manzano. Thence he was called to the Washington office, Branch of Research, where, July 1, 1923, he became Assistant Chief of Branch. Three years later he became Assistant Chief of the Branch of Public Relations in Charge of the Division of Information.

As a writer, he has shown his mettle by capturing, in 1926, the Pack prize of $500, and in 1929 the Pinchot prize of $1,000, both offered through the Society of American Foresters. The Pack prize was to be awarded the author of "the best contribution to the advancement of forestry"; the Pinchot prize, to the author of "the best essay describing the present forestry situation in the United States and proposing a nation-wide remedy for its solution." With his background of experience, his gift for thinking and expression, his special field of interest, and his natural make-up, Ward Shepard is as though made to order for association with Governor Pinchot to advance the forestry movement. That the association will be both a satisfying and a fruitful one may be considered a foregone conclusion.

DEAD HORSES

By L. F. Kneipp, Washington

Colloquially, or in the vernacular of the Office of Accounts, a "dead horse" claim means any kind of a demand for reimbursement for articles previously destroyed or damaged, and more often than not relates to an auto or fire pump or other inanimate object. But occasionally a dead horse actually is involved.

As a rule, a dead horse is not only a total loss but a real liability in that failure to sanitarily dispose of the carcass would be a gross infringement of Forest Service policies. No field man who has strained his muscles and blistered his hands digging a pit large enough to hold a horse, or has dragged together wood enough to burn one up, can contemplate the subject with complete equanimity. Nevertheless, to the ex-field men who now, as occupants of Washington office swivel chairs, pass upon such cases the records not only provoke many memories but vividly picture the conditions under which much of the field work of the Service is still conducted.

There is, of course, the fool horse who noses open hasps and hooks and regales himself upon the poisoned grain stored in readiness for a campaign of ground squirrel or prairie dog extermination. Here one can picture an anxious Ranger drenching with oil or other douses; spending fruitlessly a night of work and worry. Another horse is victim of a pasture ruckus, his leg broken by a sharp shod hoof. Here one can vision the quick flurry of the bunch, the lashing hoofs, the squeals of rage, the dragging, flopping leg, and finally the sad duty of placing a gun barrel between the eyes or back of the ear of a faithful companion, and squeezing the trigger. Maybe it is a badger or dog hole, or a loose rock on an almost vertical slope, a heart-stopping jerk, a "wild-cat" or a roll, and again the need for the mercy shot.

But when the pack strings get into operation in the heat of a bad fire season, the dead horse cases take on new elements of romance and tragedy, show clearly that the old qualities of hardihood, skill, and courage are still as essential as they ever were in meeting the hazards of outdoor work, that the horse still plays a vital and sometimes heroic part in the redemption of Service traditions and obligations.

Take, for example, the case of "Slim" who was burned to death in the Sullivan Creek fire of August 20. The pack train was cut off by fire and Slim stampeded, the packer's efforts to save him being futile. Here one can read into the record the inferno of fire, the crackle and roar of flames, the crash of falling trees the milling, whinnying pack string, the bewildered rush of a fear crazed horse, the hard, desperate ride of the man trying to save him, a smouldering carcass after the flames had passed.

"Brother" and "Lue" came to their ends in a different fashion. The pack train was picking its precarious way along a steep hillside when a bear appeared. The pack train, as pack trains sometimes do, proceeded to turn itself inside out and Brother and Lue went off the grade down the murderous slope into the canyon where they landed disemboweled, with no alternative but merciful death.

Then there was the horse who in his excitement jumped from the truck before he could be unloaded, breaking his leg; Pedro who had the misfortune to be tied to an outlaw in the pack string who dragged him off the trail, and so on, each claim for payment carrying its own story of the struggles against adverse fortune which characterize the lives of men and horses engaged in Forest Service field work. One wonders why there are not more "Dead Ranger" cases.

YE EDITOR DISCOVERS

W. W. Ashe of District 7 has been appointed by Secretary Hyde as Chairman of a special committee to prepare and submit to the Board of Army Engineers an appraisal of lands within the Mississippi Flood Control Spillways. This committee was appointed at the request of the Secretary of War.

This work is connected with studies to be made as a preliminary to flood control in the lower Mississippi Valley. The area involved includes over 4,000,000 acres where it is proposed to appraise agricultural lands, woodland, timber, soil, town lands, roads, railroads, etc. The project it is contemplated will require the cooperation of the Bureau of Agricultural Economics, the Forest Service, the Bureau of Public Roads, and the Bureau of Chemistry and Soils.

The other members of the committee are: Dr. A. G. McCall, Bureau of Chemistry and Soils, Dr. L. C. Gray, Bureau of Agricultural Economics, and Mr. S. H. McCrory, Bureau of Public Roads.

- - - - -

A fine example in reforestation is being set by the Detroit News. The State of Michigan owns 1,390,000 acres of denuded, cut-over forest lands. Of this, 453,000 acres are in established, administered State forest reserves. All need reforestation. With this fact before it The News inaugurated a memorial forest planting campaign and called upon its readers to subscribe to units in the planting program. About 138,000 took part in the plan. School children subscribed dimes and individuals hundreds of dollars. The sum of $25,000 has been donated to date. This means that 10,000 acres can be planted, for the amount is sufficient to cover all labor costs for planting.

- - - - -

There have been several casualties among the visitors to Washington which your Editor believes you should be apprised of.

Jim Scott, who is a member of both the Ranger District Administration and Inspection Committees went to a local hospital and returned with a furious looking red mark on the side of his head and a court-plastered bump on top of it. His version of the affair is that he was hit by an automobile.

Also the Chief of Operation sustained a quite minor injury which he ascribes to having fallen down stairs. In the absence of the authentic low-down on these happenings you will just have to draw your own conclusions.

- - - - -

One evening last week, our visitors were the guests of the Forester and Mrs. Stuart. The hall of the Library at Chevy Chase was used to show a slide series of old-time scenes and old timers, and Nick Carter wove an interesting story about them. Later an experimental showing was made of our first "talkie," in order to give the visitors an idea of its possibilities in Forest Service work.

After this, all hands reported at the Forester's home, where they ate great quantities of delicious cake and ice cream and consumed cup after cup of coffee and many cigarettes. Old songs were sung and a quartette, composed of sedate District Foresters, and others, sang. The quartette wasn't bad either. A very pleasant reunion.

The financial situation has been relieved by the passage on March 26 of the deficiency bill, which includes amounts to cover 1929 fire suppression, emergency guards, and roads and trails. Vouchers in all Districts had been held pending its passage, since only $11,000 was left of the current year's appropriations.

- - - - -

On account of the untimely death of Supervisor R. H. Charlton of the Ouachita as the result of an automobile accident, the supervisorship of that Forest has been vacant since early in February. To fill this vacancy A. C. Shaw of the Chotawhatchee will be transferred May 1 to the Ouachita. Supervisor Sam R. Broadbent of the Unaka will succeed Shaw and C. L. Graham, now Assistant Supervisor of the Pisgah, will take up the reins of Supervisor of the Unaka. Technical Assistant John B. Bryne of the Nantahala is being advanced to the assistant supervisorship vacated by Mr. Graham on the Pisgah and the vacancy on the Nantahala will be filled by transferring District Ranger John H. Stone from the Allegheny.

RANDALL TAKES OVER EDITORIAL AND EDUCATIONAL WORK

Charles E. Randall, in Charge of Press Relations in the Washington office of the Forest Service, has been promoted to the vacancy caused by the resignation of L. C. Everard. This Section handles editing, including "The Forest Worker," educational cooperation with schools, women's clubs, etc., the preparation of popular forestry educational material, and many important special assignments.

Randall came to the Service in February 1927, after considerable experience as a news writer and correspondent. While engaged in turning out a large amount of high-grade press material, Randall has also found time to get out an effective and far-reaching series of radio programs on farm forestry and on general forestry, and has handled many special assignments in writing and editing. Recently, he made the excellent arrangements for broadcasting the Forest Service Twenty-Fifth Anniversary celebration. - W. S.

NATURAL RESEEDING OF MOUNTAIN MUHLENBERGIA AND ARIZONA FESCUE

By B. A. Hendricks, D. 3.

The growing season of 1929 has been exceptionally good on the experimental cattle and sheep ranges of the Tusayan National Forest. Rainfall for the season May 1 - October 31 varied from 10.35 inches at Government Knolls Panel to 12.30 inches at Kendrick Panel. The greater portion of this rainfall came in the summer rainy season during July, August, and September.

Due to the combination of a good season following a year of good forage seed production a great many seedlings of mountain muhlenbergia (Muhlenbergia montana) are in evidence over the range. In certain localities seedlings of Arizona fescue (Festuca arizonica) were found also. The muhlenbergia seedlings are much more noticeable in the light or moderately used areas, which brings out the fact that it is easier to maintain a good stand of forage grasses by conservative use than it is to bring back an overgrazed area. In order for the ground to reseed there must not only be a good seed crop but the soil must be in good physical condition in order for the seedlings to become established after germination. A soil such as is usually found in the overgrazed areas does not contain sufficient humus content to facilitate its taking up the water that falls on the ground. The ground is usually packed and hard which results in a large portion of the water being lost through surface runoff. There is also no mulch of litter or fine soil to prevent rapid drying out. As a result the seedlings which do become partially established in the rainy period die from lack of soil moisture in the fall dry period. Furthermore, the forage plants on overgrazed areas where over-utilization occurs yearly are poor in vigor and do not produce a large amount of seed at best. The light density of forage plants on the overgrazed ranges combined with a light seed crop and a soil in poor physical condition with the soil fertility partially leached out by sheet erosion is not conducive to natural reseeding. On such areas protection during the rainy season and the growing period affords practically the only chance of natural reseeding. The protection allows the forage plants to mature seed and places the soil in a better physical condition by allowing some of the vegetable matter to be returned to the soil. A heavier growth of vegetation also protects the soil from rapid drying out. Fortunately protection from overgrazing during the rainy season can as a rule be obtained by distributing the stock back in the lightly used areas, because water is ordinarily available at that time on areas of good feed not accessible to the permanent waters around which the overgrazed areas are usually found.

W. R. HINE RESIGNS

Mr. W. R. Hine, District Forest Inspector in charge of the Federal state cooperation in the Gulf States District with headquarters at New Orleans, will leave that work on April 1 to become the first Executive Secretary of the Society of American Foresters.

Mr. Hine was first employed by the Forest Service in July, 1921, through an assignment to the Southern Forest Experiment Station as Forest Assistant. He was promoted to Assistant Silviculturist July 1, 1924, and continued to serve in that capacity until October 9, 1925, when he resigned from the Forest Service to accept appointment as State Forester of Louisiana. In October, 1929, he resigned from the Louisiana State Service to accept the position of Senior District Forest Inspector in the Gulf States District. Mr. Hine made a splendid record while State Forester of Louisiana in extending and perfecting the fire protection organization of the State, in developing the nursery, and in the educational work, especially in the schools, a project which has been handled by Louisiana in a unique and very effective manner through Miss Dorman.

The Forest Service, while reluctant to lose Mr. Hine from the State Cooperation work in which he has been making excellent progress, rejoices in his new opportunities, and congratulates the Society. - A. B. H.

A GAME SPECIALIST IS OURS

On March 1 Mr. Mark E. Musgrave became the Game Specialist of District 3, the only one in the Forest Service, through his transfer from the U. S. Biological Survey. He will be in immediate charge of the big game survey work throughout the District working under the supervision of the office of Range Management. From 1907 to 1910 he was a Forest Ranger during which time he gained initial experience in handling forest problems including range reconnaissance work; and since June 1916 he has been in charge of predatory animal control work for the Biological Survey, first in New Mexico and later in Arizona. His Biological Survey work has enabled him to gain a general knowledge of game conditions and an intimate knowledge of the country in the two States. - District 3

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

Vol. XIV No. 15 Washington, D. C. April 14, 1930

CELLULOSE

An address given by Charles H. Herty before the Engineering Foundation, composed of civil, mining, mechanical, and electrical engineers. Dr. Herty has had a distinguished career as a chemist. He was Professor of Chemistry in the University of Georgia; he moved up to the Chair of Chemistry in the University of North Carolina, and then became Editor of the Journal of Industrial and Engineering Chemistry, published by the American Chemical Society, one of the most potent factors in establishing in the minds of both chemists and executives, the relation of chemistry to industry. He served with great distinction as President of the American Chemical Society; he has been President of the Synthetic Organic Chemical Manufacturers Association; as adviser to The Chemical Foundation, he has assisted its President, Francis P. Garvan.

"Those who have been reading about chemistry in the papers probably think of chemistry chiefly in connection with dyestuffs and synthetic materials, this remarkable new industry which has grown up in this country since the War. The chemical world for the last 50 years has been going through what might be called the Coal-Tar Period. It has been a marvelous period, a romance all the way through -- wonderful accomplishments, wonderful additions to the world's wealth and beauty and health. Yet the coal-tar industry today has become somewhat like the automobile industry, which during the past 25 years went through certain marked changes in its early stages, and now, while still going on to further and further accomplishment, nevertheless, has become more or less standardized. We don't get the sharp contrasts and the striking new things in the automotive industry which we had at one time. So in the coal-tar chemical industry, no very striking things are coming out. Advances all the time, yes, but in a somewhat standardized channel. We have gradually and almost unconsciously passed over, industrially at least, in this country, to a new age in chemistry, the Age of Cellulose.

"I shall try to show just what I mean and will start by giving you a few words as to what cellulose is. There are three elements in it, carbon, hydrogen and oxygen. When we chemists write the formula of cellulose we do a peculiar thing. We put a 6 after the carbon, representing six atoms of carbon; put 10 after the hydrogen, representing ten atoms of hydrogen; and 5 after the oxygen, for five atoms of oxygen. Then what do we do? We put a parenthesis around that formula and write a little letter 'n', which means we don't know what it means. That 'n' means that it may be any multiple, and the textbooks usually say it is around 300 or 500 times $C_6H_{10}O_5$.

"Cellulose constitutes practically the earliest chemical factory in the world. Before man existed on earth, before animals existed, back in the plant period, through the energy of the sunlight, through the water of the soil, and the carbon dioxide of the air, under the influence of the chlorophyl in the leaves, there grew great forests. In the carboniferous period they became submerged and our great coal beds were formed, according to the degree of destructive distillation to which those great plants were subjected. Cellulose represents the brickwork of the factory, the walls within which the protoplasm of the plant carries on its activities. We find in cellulose a tendency to form long strings and adapt itself to the formation of the trunks of our trees and of the stalks of our crops, like wheat and oats and rye and barley. Now keep in mind that it is under the action of the sunlight that this happens. We all are anxiously looking all the time for means of increasing our national wealth. Today the greatest freely given wealth is sunlight, the energy of the sun. The question that all rational people are asking themselves is: Are we making the wisest use of that great daily source of new riches, which costs us nothing to obtain?

"What part does cellulose play in the industries of the United States? I asked Mr. Magnus Alexander, of the National Industrial Conference Board, to give me the capitalization of three industries,-- and there are others of minor importance-- dependent on the use of cellulose as such. These figures give you some idea of the magnitude of the industrial life of America tied up in cellulose, where cellulose is used in its natural state: the lumber industry with a capitalization of $3,369,000,000; the cotton textile industry (the little fibers in the cotton are the purest form of cellulose we know in nature), $2,500,000,000; the paper industry with a capitalization of $1,336,000,000-- a total of practically seven and a quarter billion dollars in those three industries making use of cellulose as such.

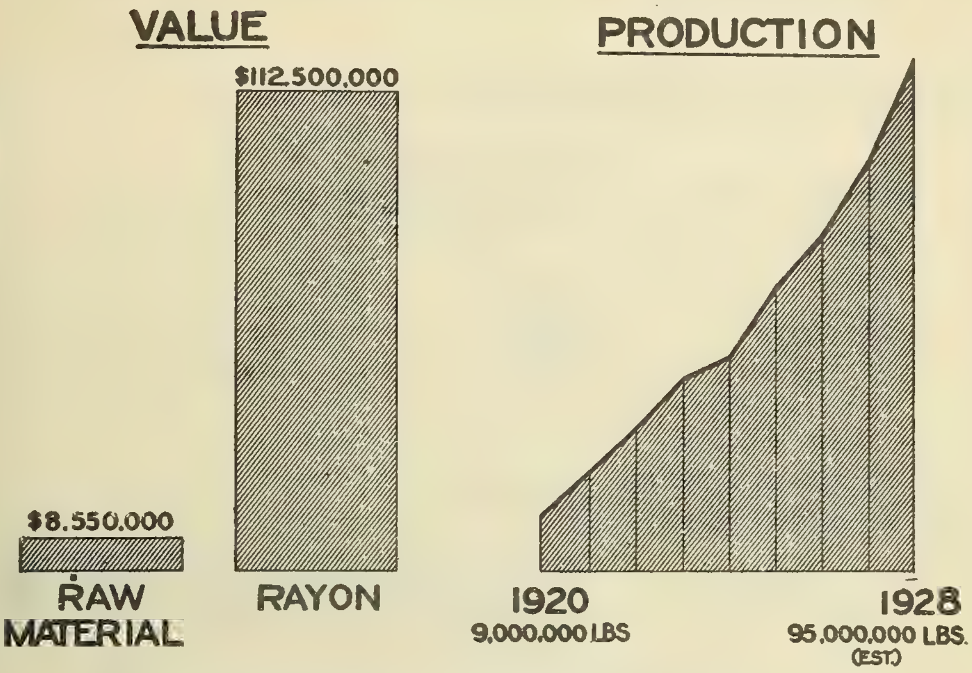
"But the fascinating part of the story to me is in a group of industries, partly new, which have sprung up almost overnight. I say partly new, because one of them is quite an old industry. If you treat cellulose with nitric acid, in the presence of sulphuric acid, it becomes nitrate, and then you have the great military product, gun cotton, the propellant which drives a shell loaded with high explosive out of a big gun, or smokeless powder for the smaller weapon. That, of course, is an old industry. There is another industry, more or less old, that is, celluloid, the pyroxylin industry, going back to the days when we used to wear celluloid collars. Here again you have nitrated cellulose made up with plastics. The celluloid industry is directly dependent on the nitration of cellulose.

"If any of you attended the last exposition of the Chemical Industries at the Grand Central Palace, in New York, you may have been amazed at the new products which have come out under various names, which show a tremendous industrial application of cellulose: for instance, the artificial leather, which is playing so great a part in the automobile industry; toilet articles, combs, brushes, and so forth, again from cellulose with chemical treatment; "movie" films, all made from cellulose either through nitration or through the formation of cellulose acetate.

"In the development of the airplane, one of the greatest problems that we had during the War, which we had to tackle quickly, was to make cellulose acetate to coat the wings and the fuselage. That problem was successfully solved from a chemical standpoint. Then you see these beautiful wrappings, for instance, for our boxes of candy, cellophane-- transparent and making the package practically air-tight. Cellulose is spreading into more and more channels all the time.

"An industry of far greater national significance is the lacquer industry. I suppose no industry has ever gone through such a sudden revolution as has the industry of varnish-

RAYON



SOURCES OF CELLULOSE-(ALPHA)

	AVAILABLE	USED IN RAYON
PRESENT		
WOOD PULP	2,500,000 TONS	30,000 TONS
COTTON LINTERS	250,000 "	18,780 "
POTENTIAL		
CORN STALKS	20,000,000 TONS	—
PEANUT SHELLS	25,000 "	—
COTTON SEED HULLS	750,000 "	—

CHART NUMBER 1

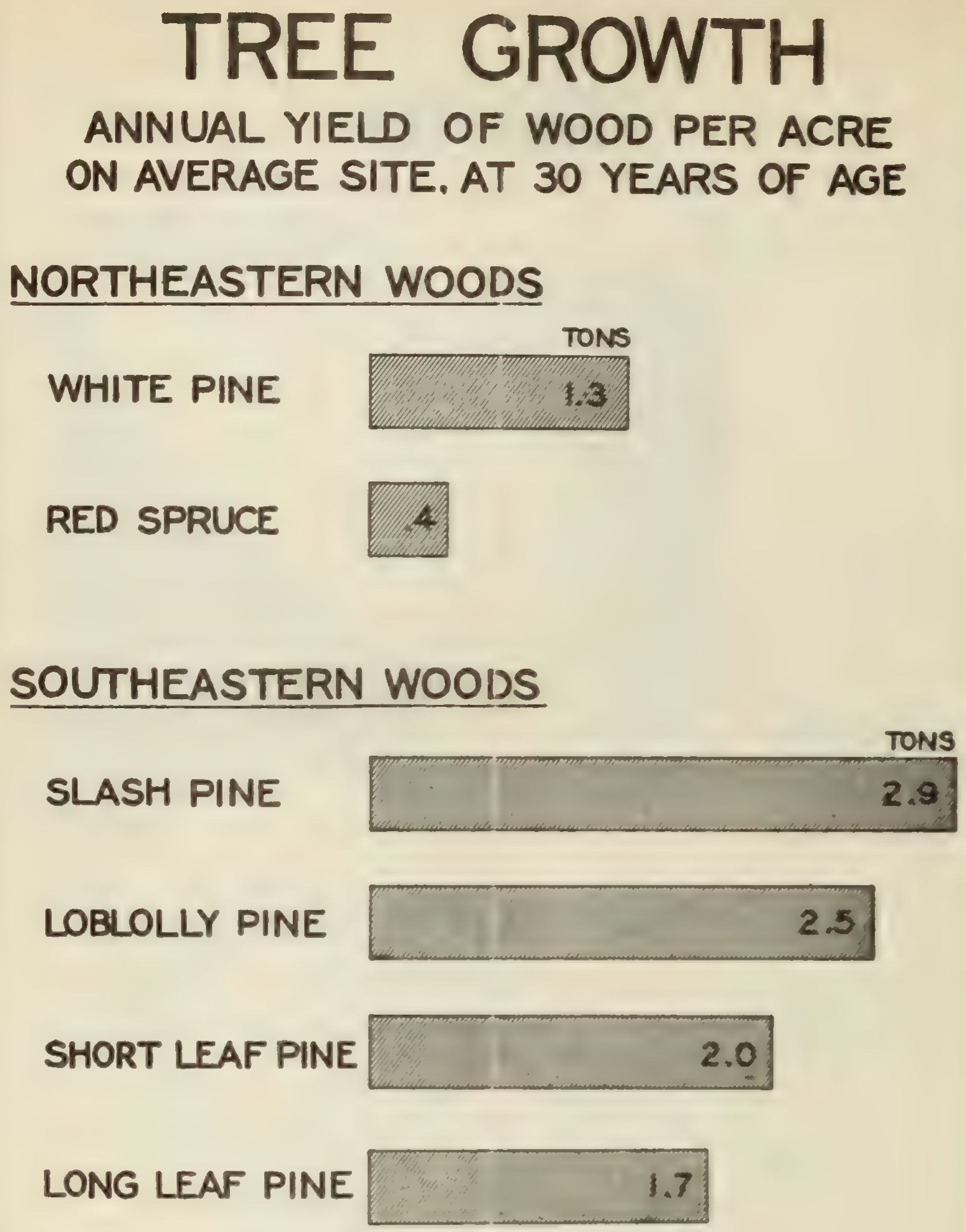


CHART NUMBER 2

ing, and particularly does that apply to automobiles. If any of you engineers are familiar with the layout of an automobile plant, think of the space that would be required, think of the tie-up of capital that would result, if the great output of automobiles today had to go through the old-fashioned way of painting and varnishing, rubbing, another coat, and so on. Today, with these new lacquers made from nitro-cellulose with a resin and a suitable solvent, the coatings are sprayed on. The old car gets a little rusty looking. Take it in, spray it, and out again--almost an overnight performance. Some of our people think that a few persons made a lot of money out of that improvement, but the public is getting the benefit because the competition among the lacquer makers is keeping them from making too much, and the same is true among the car people. So the public is getting the great saving on capital investment tied up in the automobile as it goes through the plant. The cellulose lacquer industry is growing by leaps and bounds today; we know not what may come tomorrow.

"But an even more striking development in the use of cellulose and one which is going to have perhaps greater economic significance than any of those I have mentioned, is the development of this wonderful new fiber, rayon, or artificial silk. At a dinner in Paris about five years ago, I had the pleasure of sitting next to Count de Chardonnet, who was the first man that got out a product of artificial silk. I was in Berlin in 1900 at a chemical conference when the first samples of artificial silk were brought to Germany and shown. It was an extremely interesting occasion. Now look what is taking place in this country and all over the world, but particularly the American movement in the volume of manufacture. I brought with me tonight some charts I used in an address at the annual meeting of the National Industrial Conference Board. If you will look at chart No. 1, you will notice the figure under the head of Production. Look at the jump in production from 1920 to 1928. That predicted 1928 production has been exceeded since that figure was drawn. With the increase already in effect, the production of rayon for this year will pass 100,000,000 pounds. I have seen the estimates for next year; from plant extensions already contracted for and new plants going up, the output of rayon for next year is estimated at 140,000,000 pounds, in this country. Now think what that means.

"What is rayon? There are four different ways of making it, just four, but primarily, all depend upon the conversion of cellulose into a thread by getting it into solution by one means or another. The main point is this: Cellulose, either from cotton or from wood, is gotten into a form where it can be projected from small openings, the solvent quickly evaporated, the thread of cellulose then twisted into larger threads, and woven into the beautiful garments we see today which have taken possession of the women's garment field and are already in the field of men's underwear. It is coming on so strongly and with such tremendous advances, because research is going on intensively in that field.

"When you think about the fact that the rayon industry is only eight years of age, in this country, the progress is perfectly remarkable. I asked a chemist for the du Pont people in Buffalo, 'What is the most important advance the rayon industry has made in the last year?' He said, 'Uniformity; they have made the fiber stronger.' I asked another chemist, 'About what per cent of improvement in the quality of this fiber do you estimate?' He said, 'That is a very hard question to answer in numerical terms.' I said, 'Would ten per cent be a safe figure?' He said, 'By all means; I think it is more.'

"Think of that! A ten per cent improvement in the quality of this product yearly taking place. What does it mean? It means that the chemist is going Nature one better. Here you have a fiber that is infinite in length. So long as you have the juice to keep squirting through the hole, you don't have to bother about length; whereas we used to make a great difference in the price between long and short staple cotton. It is wonderful in its beauty. When this material first came out, the sheen of the fiber was so bright that it ruined the sale. All that has been controlled; that sheen has been taken off. That is perfectly under control. There has been trouble about strength and the influence of water, and yet only a few weeks ago the announcement was made that a new artificial silk has been gotten out which is stronger than natural silk and more resistant to water, and that the silk thread people have taken the entire output. I don't hesitate to make the prediction that before many years go by, natural silk is going to be doomed; and I will also make the prediction that before many years our cotton planters will have a real economic problem on their hands as to what they are going to do about it, because the artificial fiber has all the advantages.

"Where does it come from? Well, you see the tables below the diagram. There is the output, about 30,000 tons from wood pulp against 18,000 from cotton linters. That is practically three-fifths from wood pulp and two-fifths from cotton linters. The supply of cotton linters which they used to give away or sell for a cent a pound, is now bringing ten cents a pound, in competition with wood pulp. What about your wood pulp? That shows again this wonderful value of research. Up at Berlin, New Hampshire, the Brown Company, through research, has improved the quality of alpha-cellulose from wood pulp so much that wood pulp is finding its way into these finer uses, until today we can freely say that the possibility of making the tree directly into the lady's dress, is already an accomplished fact.

"There may be great economic considerations. If the cotton farmer says that he can't produce cotton for less than twenty cents a pound, and make a living, how is he going to compete with wood pulp which is being sold readily at ten cents a pound, when people are getting fabrics they prefer to cotton? There is a partial answer to the question. He has got to get busy on his cottonseed, which is not beginning to bring anything like the value it is worth today. There are some great big economic and research questions involved, but certainly he must enhance the value of his cottonseed to maintain his economic balance.

"We are getting into the age of cellulose deeper and deeper. Those are some of the industries already existing. As to possibilities, we know already, for instance, that it is an easy matter to convert cellulose right into sugar; that it is being done. It isn't quite economic at the present time. That, again is a question of research. We know that sugar can easily be fermented into alcohol, and I am not talking about prohibition alcohol but industrial alcohol. The industries of the country, and this great industry itself, is taking enormous quantities of alcohol. If you look at the figures of the U. S. Census, you will see how the production of industrial alcohol has gone up by leaps and bounds within the past ten years, and there will be no stopping of it as these industries expand. Alcohol is the most important reagent for chemists, after water.

"There are great industries ahead of us which have partly been tried and are not yet quite economic. But I want to bring this point home, the reason why we went forward in chemistry so rapidly is the development of the coal-tar compounds. Although the first synthetic dye was stumbled on accidentally, and the first few dyes were made by rather crude, empirical methods, nevertheless, quite early in the life of that industry a German chemist, Kekule, worked out from the available data compiled by research chemists, a picture of the makeup of a molecule of benzene, and conceived that structure. As soon as he did that, with that picture clear before him, infinite possibilities were at once suggested for the development of new lines of work; chemists could predict in advance what was going to happen. From this achievement sprung up all those wonderful new developments in the coal-tar field.

"In the utilization of cellulose, we have taken a different way. Today we don't know what the formula of cellulose really is. I am happy to say this, however, that Sir James Irvine, at the University of Aberdeen, has done some beautiful work in this field, and it begins to look as if that substance isn't anything like as complicated as we thought and instead of "n" being some three or four hundred, it looks as if it may be only 3, and that is very helpful.

"Another help that we are getting is that very useful tool, the X-ray. Strange to say, the people who brought light on this question of the constitution of cellulose, are botanists. Sponsler of California is studying the X-ray picture given by cellulose. He has been able to work out the configuration of the molecule in a way that is extremely interesting, because it conforms closely to studies made in other ways. What may we not expect in the utilization of cellulose if we once get a clear, accurate picture of just how that molecule is made up? I don't hesitate to say to you, and I don't think I am indulging in any fancy whatever, that we have just as much right to expect an infinite number of new industries that no chemist dreams of today, to develop out of cellulose as from coal tar."

* * * * * * * * * *

"We shall find that the time will come when we are going to make better and better use of the God-given sunlight as a great national source of wealth. The question will be asked: Where is all this cellulose coming from in the future? I hope you will pardon my enthusiasm for the South-- there is one thing we do hear about down there, the climate. We always have that, whether the Florida storms blow or not. Note these figures of the Department of Agriculture on chart No. 2: Red spruce and white spruce at 30 years of age yield 0.4 of a ton of wood per acre per year, slash pine, 2.9 tons per acre. A figure sent me yesterday by a man in the Forest Service who has been making re-measurements, makes that really 2.83 tons. That is, over seven times as much cellulose will grow on an acre of land down in Southeast Georgia as will grow in Canada. Now can you tell me, if we will wake up in the South and take care of that timber and give it a chance, that down there isn't going to be the natural source of the cellulose supply for the future? That great section in Northern Florida and Southeast Georgia, has a forest coming up by natural reproduction, where their big problem is to thin out the young trees.

"Yesterday's newspaper showed 700,000 acres of land in Florida brought under fire protection. I know of another tract of 200,000. The idea of protecting against ground fires in those States is spreading as fast as the fires used to spread. With that, up come the forests again. That is going to be, some of these days, the place where the rayon mills of the South will utilize the wood pulp made from Southern timber, which is utilizing that God-given sunlight, and which will form, as I confidently believe, the basis of many, many industries that not even a chemist in this country dreams of today."

DOES DEGREE OF UTILIZATION TELL THE STORY?

By James B. Beals, Rio Grande

I was keenly interested in Mr. Hill's article in the January 20 Service Bulletin dealing with a proposed measuring stick for forage utilization, and I feel sure he has evolved something that will result in more accurate statements concerning utilization than those based on ocular evidence obtained in a promiscuous way.

Any further comments by me on this question must be considered as coming from a Ranger who is not a technically trained man, but who is interested in range problems and who has been faced with the problem of judging degree of utilization, but more particularly the problem of reaching conclusions from statements of utilization.

In studying Mr. Hill's formula, the first thing that struck me was the total lack of information regarding the period of grazing use. Given a reasonably accurate type write-up, upon which I believe the value of the formula depends, and reasonably accurate basic data on yearly production, I can readily see how utilization could be determined. Still, I can visualize cases where if degree of utilization is accepted by a reviewing officer as primary evidence of proper or improper use, local officers might be subject to criticism for poor judgment in establishing carrying capacities.

One case I have in mind is that of one sub-unit of a large cattle range which is generally a Muhlenbergia-fescue-gramma consociation. This sub-unit is used as spring range because of its low altitude and shortage of water in late season. Use begins normally May 15 and is practically ended for the season by June 16. The bulk of the forage available at that time of the year is, of course, that produced the previous year; "old feed" the cowman calls it.

On this range, just when would be the proper time to observe degree of utilization so that the statement would be of greater value than simply a picture of contemporary conditions? Is there any definite time on this range, either during use or after use, when a statement of utilization would convey information of value with respect to capacity? Observations taken on this sub-unit during October would reveal little if any use after flower stalk production except some cropping of the heads of the plants during the drift out in the fall; and consequently a record of utilization taken at that time and considered by itself would reflect upon the management of that part of the range.

Perhaps I have taken the long way round to bring out my point which is: Proper degree of utilization, as expressed in column 8, should, in my opinion, be based largely if not entirely upon the stage of forage development at time of heaviest use. I have always believed, perhaps in error, that heavy use after seed maturity or at least after flower stalk production, was no more harmful than lighter use spread over the entire grazing season.

Should not recognition be given to the stage of forage development at time of heaviest use when setting up the proper degree of utilization for any type or situation?

YE EDITOR DISCOVERS

The State Reforestation Commission of New York has had introduced in the Legislature an amendment to the Constitution which it is hoped will bring about a new era in forest conservation in the State.

A program to reforest at least one million acres for a ten year period has been started by New York and this amendment to the Constitution will permit the State to purchase such lands as it may deem advisable and provide for the growing of timber for commercial purposes. A good share of the vast area of idle land in need of planting is in the Adirondack and Catskill regions, but there will be no interference with the scenic features, recreational opportunities, fishing and hunting and other park pleasures enjoyed by the people in these regions.

The New York Section of the Society of American Foresters, the New York State Forestry Association and the faculty of the New York State College of Forestry have gone on record as approving this Constitutional amendment

- - - - -

An interesting experiment to determine how much damage an ordinary fire does to the buds of a pine tree is told in a recent letter received by this office from Mr. Ben May of Mobile, Alabama. He describes it as follows:

"I made some experiments on some fire lines that we were burning through a territory which had been protected for sometime. These lines had never been burned before and there was a very heavy growth of grass there, so the fire was unusually hot. I took pieces of paper about one inch square and put them at the base of the bud, folding one piece around each bud. I did this on trees which were from one foot to four feet in height. Even where practically all of the needles were burnt away the paper did not catch fire in a single instance, and there was only one piece of paper which even became scorched on one edge. The men who were watching me do this said it was impossible for the paper not to burn up when they saw the needles themselves burning, but in each case I was able to go back and show them the paper.

- - - - -

Alexander Legge, Chairman of the Federal Farm Board, Glenn Frank, President of the University of Wisconsin, R. Y. Stuart, and many other nationally known speakers, among them the foremost foresters and conservationists in the country, will take part in the Fifty-fifth Annual Meeting of the American Forestry Association, at Hotel Radisson, Minneapolis, Minn., April 29, 30, and May 1. The meeting, looming as the greatest in the history of the Association, will probably see a larger gathering than ever before. Discussions will be broader and of more popular interest, covering all the phases of forestry and its related field.

- - - - -

The annual meeting of the National Committee on Wood Utilization of the Department of Commerce, whose 200 members represent more than 80 trade associations interested in the intelligent utilization of wood, will be held in Washington on May 2. Special attention will be devoted to the Committee's activities in the building and construction field, but other projects also will be discussed.

- - - - -

A copy of "Library Notes" by Esther Lundgren, D-5 Librarian, has just come to the attention of the Editor. This impresses us as a very worth-while sheet. It should afford Forest officers of the District a splendid opportunity of keeping in touch with library books of special interest.

- - - - -

In honor of our visitors from the wide open spaces, who are attending the District Forester Meetings in Washington, a card party and dance was given at the Washington Club on March 28.

"FRIENDS OF MAN"

By Harry Irion, Washington

Those attending the Family Meeting April 2 witnessed what is probably the best forestry picture thus far produced. This exceptionally well conceived four-reeler, which bears the title "Friends of Man" and deals with the "greening-up" of woods in the Southland, brings into play the elemental human prejudices, passions and frailties, a touch of homely humor and a half-suppressed but pleasantly consummated love motif. The picture gets its message across skillfully and effectively.

An old dilapidated Ford, that will hardly run under its own power, makes "Old Jeff" the most villainous villain. It prompts him to double-cross the father of his son's sweetheart, after the Ford owner tempted him by reducing the sale price of the car to $50 -- or the precise amount "Old Jeff" may claim as a reward if he violates the Ninth Commandment by making it appear that the girl's father is unlawfully burning the woods.

To make it worse for his son, "Old Jeff" soundly thrashes the girl's father because he lacked the energy required of a fire fighter. But in spite of these adverse and damning circumstances, "Old Jeff's" son wins the girl's affections and hand, all the local woods burners are converted, and everybody is as happy as a clam at high tide as the final curtain is drawn.

IS EDUCATION EFFECTIVE?

By E. Murray Bruner, District Inspector, Central States

Last July Governor Parnell requested the Secretary of the United States Department of Agriculture to make a survey of the forestry situation in Arkansas. In response to this request the Forest Service made such a survey during the latter months of 1929. A report in the form of a bulletin to be published by the University of Arkansas and based upon this survey has been prepared and will be issued in a very short time.

I was detailed to make the field survey and in carrying it through I had opportunity to learn at first hand something as to the effectiveness of the forest fire prevention educational work carried on in the sections about the Ouachita and Ozark National Forests by means of the Traveling Truck Project conducted by Forest Ranger Waite. My visits into the various counties about the Forests thoroughy convinced me that this very direct way of carrying the message of forest fire prevention to rural communities is proving highly effectual.

It was no uncommon thing to hear citizens repeating some of the very things Mr. Waite had said in his talks about the destructiveness of forest fire and the benefits to be expected from careful handling of forest lands. The really convincing thing about this was that they actually seemed to have incorporated these forestry truths into their own way of thinking about the forest resource.

I shall cite but a single instance. While in Izard County I met with a farmer and owner of woodlands who lives near one division of the Ozark National Forest and who had heard Mr. Waite's lecture. This man proceeded to tell me just how a woodland should be protected from fire and how the timber should be cut so as to insure a continuous yield of the most valuable kinds of trees. He said many farmers in his community would soon lack enough timber to supply their own needs simply because of the negligent way in which they were handling their woodlands.

As a further striking evidence of the splendid results being attained by the Traveling Truck Project this farmer repeated over and over again his conviction that there was urgent need for "forestry lectures" to carry the message of forest conservation to the owners of woodlands and the general public. He emphasized his belief that it is ignorance in the matter of timber growing on the part of the landowners and other citizens that is responsible for forest destruction by fire and improper methods of timber cutting.

- - - - -

One of the chief values of early foreign missionaries from the standpoint of business men was their activity in introducing manufactured products into foreign lands. They were unofficial sales people. Today they play a comparatively insignificant part compared with motion pictures. The associated manufacturers of the United States can afford to offer the motion picture magnates a subsidy for the market-opening help given exporters of everything from soap to motor cars. Our motion picture civilization is now receiving world-wide distribution.-----From "Ediphone Notes" Thomas A. Edison, Inc., Wash., D. C.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1 1905

Service Bulletin

Contents Confidential

Vol. XIV No. 16 Washington, D. C. April 21, 1930

THE FIRE CONSCIENCE OF THE FOREST SERVICE

By Henry L. Spencer, Gunnison

A chain is only as strong as its weakest link. I like to think of the Service fire protection organization as a chain - a chain which, through the heavy strain put on it during a trying fire season, must be mechanically sound and conscience perfect to carry its load. Two essential links are required in this fire chain - a strict fire conscience and fire sense! The first of the two, our fire conscience, is almost invariably taken for granted as simon pure, 24 Carat, and strong enough to hold an elephant. But is it? There are those both in and out of the Service who do not believe it is, and the instances cited - widely separated and under contrasting circumstances - are designed to incite quiet introspection by each member of the Service from the Big Chief down to the smoke-chaser. What we are after is to strengthen the chain, and not to criticize Districts, Forests, or individuals. The question is viewed solely in the abstract; in some of the cases cited even the names of individuals concerned are not known, and in others individuals are seen only dimly in the background of the picture. But there is no work in our organization where the giving way of a weak link has such far-flung and cataclysmic results as in the fire game; not only in timber values lost, but also in loss of morale to the organization.

Let's go! Before the castastrophic fires of 1926 in the Northwest had ceased to burn, came drifting down from the fire lines a report that the fires could not be controlled - that the fire demon had the field unopposed! A ranger had discovered a fire in its infancy - just one more in addition to the dozens already burning - but upon ordering necessary fire fighters and equipment neither was forthcoming. The powers-that-be had decided the fight was useless, and rather than expend additional sums in suppression it was better to hoist the white flag and let fire do its stuff!

Last autumn, when the disastrous and costly fires of Montana were drawing to a close, an officer high up in the Service suggested to me - simply as food for thought - consideration of whether it would not be better to let these unproductive forests burn rather than continue the expenditure of large sums in vain attempts at suppression. Truly, after viewing the large gaps made by the fires of 1919, 1926, and 1929 in the ranks of these magnificent forest trees one is tempted to such thought. But to a strict fire conscience such thought is untenable!

Let us get a little nearer home in discussing a strict fire conscience. One of the most disastrous fires in the northwest last summer was started by men in our own ranks.

Smokechasers, on a hard trip to put out a lightning fire, were overtaken by night, built their campfire in the duff and failed to entirely put it out! A strict fire conscience would have demanded that they pack water from the nearby stream, and with their bare finger tips "feel" the fire out - But I forgot that the standard equipment of these men does not provide a canvas water bucket, and that as a rule they do not wear hats!

I attended a ranger meeting at Ouray, Colorado, the last days of May, 1928. It was field day for the fire subject and some 20 Forest officers were gathered on a wooded knoll a mile southeast of Ouray in the wonderfully beautiful "Amphitheatre Basin". A half mile away two elk - from a small band planted by the citizens of Ouray - forged through the thick underbrush to an open hillside and raised their heads inquiringly at so many intruders. The setting was complete from an aesthetic standpoint - marvelous scenery, game and the woods all were there - to draw forth an inspired discussion on how the imaginary fire on the opposite ridge should be put out. The ground was dry but a chill wind came up the valley and the Rangers got cold. A sizable camp fire was the answer, to be replenished from time to time as the two hour harangue on the technique of putting out the fire which didn't exist, progressed. The imaginary fire satisfactorily disposed of, the Masters of Ceremony announced cars waiting on the road a quarter mile distant, to take all hands for a brief ride over the "Million Dollar" highway, before dinner. The hot embers of our fire were kicked together and hurriedly camouflaged with a couple inches dry dirt - our normal June fire season was at hand and most everybody helped. Then a break for the cars, time was short for the ride. But one man hesitated a brief second and didn't go! Ten feet behind the retreating foresters another right about faced. Thirty yards away a long Ranger, after a couple backward glances over his shoulder, turned and came back. What was the matter? It was the strict fire conscience working! These men missed the million dollar trip but satisfied their fire conscience by putting out the fire.

I once assisted on a dangerous hundred acre fire which had "blowed up." It was barely under control the second time. All hands had been fed promptly by 6 a.m., and the fire fighters had just left for the line. Even this early in the morning the wind showed signs of coming up and I was anxious to get over the lines with the officer in charge. Thinking he was ready to go I went on ahead several hundred feet to the spring, filled my water bag, and nervously waited several minutes. No come, and I loped back up to the camp - What do you think I saw? He had his feet restfully poised on a bench and was tranquilly perusing the sport page of a daily paper!

Another time I came in contact with a worn civilian fire fighter on a train, returning to his home after a siege on the fire line. He was of the slow speaking unobtrusive type, and in the course of conservation astounded me by saying: "It doesn't look to me like they really want to put out some of these fires", and went on to elucidate. He had been on the first line of what had later developed into one of those large disastrous fires we do not like to think about. A full complement of fire fighters had exerted every effort and by noon had successfully trenched the fire. Then chuck! Every man had left the line and gone to camp for dinner. When they returned the fire had crossed the line in many places, the wind had risen and shortly afterward the conflagration crowned in a dozen places and was away!

And so we could go on citing cases to show that the hoary headed frost of indifference, consciencelessnes, carelessness - or whatever you wish to call it - rests in the fresh lap of the crimson rose; but is this just what we are after? To me these cases indicate the crying need of a mechanically sound and conscience perfect chain to carry our fire load. The first link of this chain is a strict fire conscience - a link elusive of expression in words yet compelling in action of the individual; a link which impels quiet introspection of one's personal actions and attitude in the fire game; and above all a link tempered with the unquestionable edict that effective fire protection is, and must continue to be, the very first and strongest link in the chain of forestry. And securely welded to the link of Strict Fire Conscience must be the link of Fire Sense - not a link of complicated technique, just good old common horse sense in handling forest fires! But this is another chapter.

HAVING A FIRE CONSCIENCE

By Ye Editor

A long time ago ----- When ye editor had been in the Service about three months, he was routed out of bed in the early morning (after a 55-mile horseback ride the day before) to fight a fire. The lookout reported it and gave a precise location. Ye editor saddled his cayuse, got a water bag, shovel, and ax from the tool cache and rode to ye fire, After an hour's hard fight using water, ax, shovel, and muscle, the fire was out--dead out. Then he sat down to rest and consider.

The fire had started along a railroad and was burning grass, some old logs, and a perfectly good lot of fence posts that held up the barbed wire of a line fence. Cool consideration faced these facts-- the fire area was bounded on two sides by a fine big stream and on the third side by the railroad. Except for the fence posts, no damage could have resulted since the fire was moving toward the stream.

Therefore, if ye editor after watering the fence posts, had sat down, got out his pipe and watched the fire, it would have burned itself out at the stream and ye editor would have had a great deal more respect for his judgment than he had after contemplating his handiwork.

But he had a fire conscience. He loped to the fire, the ax and shovel in one hand, and guiding a snaky cayuse which possessed no conscience, with the other, and he plunged into the job of putting out the fire with a fine display of energy, and splendid muscular effort, but, as he later saw it, not much mental energy.

Since that time he has had great respect for those who fight our fire battles each year, and is glad to admit that they doubtless know their business, and from long experience have discovered that judgment plays a mighty part in fire fighting, especially when fires are breaking out everywhere one cares to look.

Here, then, are two views about the Fire Conscience. Spencer's and ye editor's. Doubtless this is a subject that our readers would like to see discussed. Will some of our experts oblige?

A SUPERVISOR'S IMPRESSIONS OF THE DISTRICT FORESTERS' MEETING

By J. C. Kuhns - Whitman

During my 20 years in the Forest Service I have often had the same curiosity relative to the workings of the organization that prompt a small boy to take a watch apart. That curiosity has been satisfied for I have spent much of the last month watching the mainspring of the Forest Service function. The occasion was the District Foresters' meeting in Washington.

A feeling of gratitude for the opportunity to sit in on such a meeting should impel me to refrain from commenting on any unfavorable impressions which I may have gained. However, in many respects the District Foresters, Assistant District Foresters, and the members of the Forester's staff conducted themselves and the meeting in very much the same way that Rangers and Supervisors do.

They had the usual difficulty in arriving at a common understanding of the terms and policies under discussion, and in ironing out differences of opinion between individuals who were dealing with different sets of conditions. The more reticent Forest officers often had difficulty in getting a word in edgeways, while others considered parliamentary rules as a scrap of paper. Some were brutally frank and some approached each subject in a politely circumspect and time-consuming manner.

All in all they were a very human and, therefore, a very likeable bunch of fellows. They had a number of difficult problems to solve and they "seen their duty and done it".

In spite of District Forester Kelley's repeated assertion that complete records were not available, a stupendous amount of data was assembled, compiled, and tabulated as a basis for the conclusions reached.

As an onlooker, I had considerable difficulty in determining the real meaning of some of the discussions. Also, to one whose horizon has been limited to the boundaries of a National Forest some of the inter-District problems were rather startling in their complexity.

It was hard for me to think in terms of Regions instead of Ranger Districts; but, through being forced to do so I necessarily had to broaden my viewpoint. For that reason alone the meeting was of real educational value to me.

It is unfortunate that every Forest officer could not have secured the same initmate knowledge of all the various steps taken to handle the most involved of all Forest Service jobs - that of distributing funds among Districts. The same might be said of such subjects as personnel management, Ranger District analysis, and others.

As a matter of fact, I feel that a fuller knowledge and more complete understanding of such matters on the part of the rank and file of the Forest Service would result in less misunderstanding and more whole-hearted cooperation and more constructive effort in the Service.

It is only natural to assume that an isolated Ranger or Supervisor will not obtain a well rounded-out idea of a subject which has occupied two or three days time of the highest executive officers in the Service if the results of the latter's efforts are passed out to the field men in the form of a few tense paragraphs, particularly if the intent of these is to convey the request that a certain job be done in a certain way, or to state that, even with increased appropriations, Ranger stations and a more liberal promotion policy can not be financed.

"Ours not to reason why" is not an appropriate slogan for the Forest Service. Our organization is such that it is essential that we know the whys and wherefores of jobs which we have to do largely on our own and without constant direct supervision.

For this reason I was glad to learn that unexpurgated copies of the committees reports are to be made available for the field. These do not tell the whole story, nor do they indicate the number of times that committees were ordered to add to, subtract from, and otherwise change their reports before the battle-scarred documents finally arrived at the safe haven of Assistant Forester Headley's war bag.

In spite of a rather strong suspicion that, through some mistake of the hotel management, a replica of a torture room of the Spanish inquisition had been assigned to the Forest service as a meeting place, the District Foresters and Branch Chiefs took their time in making decisions. Each District had capable, conscientious representatives to plead its cause, and if they overlooked any bets I failed to detect them. It was a case of give and take, although it is rumored that two Districts did all the taking.

New jobs were discussed pro and con and were distributed with far less restraint than was the case with the F. Y. 1931 funds.

Field men will be interested in learning that the meeting netted the Forester's office almost as much in the way of new work as was assigned to the Rangers. New and additional work seems to be one inevitable result of such a meeting. Yet, after I had learned why such jobs were desirable I couldn't see how any progressive Forest officer could vote against them. I may have a relapse after the enthusiasm over the meeting has worn off, but it will be a long time before I will forget the history that was made at the Washington conference.

JUDGING UTILIZATION

By C. A. Kutzleb, Routt

Reference is made to the article by R. R. Hill "Judging Utilization of the National Forest Rangers" in the Service Bulletin of January 20. It seems to me that the above article formulates a definite and important problem. It sets up a definite standard of utilization and a standard method of judging utilization, and definite standards along this line are things we need.

Strictly from the standpoint of judging utilization, however, will it be necessary to consider more than one species in any area or in any type? Will not the per cent of utilization of any one species be about the same as the per cent of utilization of the other species? Since utilization will depend on the palatability of the various species concerned, will not the total utilization be the same as the utilization of any one species?

Consider the following hypothetical case.

Species.	% of total left on range		% of total forage	% of total forage left	
	proper	current		proper	current
Col. 1	4	6	7	8	9
Aira	40	70	50	20	35
Poa	20	10	20	4	2
Sedge	30	30	30	9	9
				33	46

An indicated utilization of - 13%

In actual practice will we be likely to get such a result. While the total forage indicates an under utilization of 13 per cent have we not actually undergrazed the aira 30 per cent, overgrazed the poa 10 per cent, and broke even on the sedge? Does the above result indicate an actual under utilization of 13 per cent? Or does it indicate that our standard in column 4 is wrong?

Does not the following case indicate the result which would be secured in actual practice?

Col. 1.	4	6	7	8	9
Aira	40	60	50	20	30
Poa	20	40	20	4	8
Sedge	30	50	30	9	15
				33	53

An indicated utilization of - 20 per cent

Note that this 20 per cent is also shown in the difference in each case in columns 4 and 6 and if our standard is correst I think that this is the result which could be expected in actual practice. Why then consider the factor of per cent of total forage at all? Of course this factor would be established at the same time the standards were established and would not affect the field work required in securing the data recorded under column 6.

Some such plan, I believe, will be of real benefit and will help in standardising our judgment of utilization. However the data recorded should be made from actual measurements and not from estimates. If we can secure about the same results from measurements of one species, why spend the time measuring a number of species?

YE EDITOR DISCOVERS

The District Forester's Meeting to determine new and better methods of appraising needs for funds is over, and so far as existing data permit the methods developed by the various committees are being applied in the making of S. & E and improvement allotments for the coming fiscal year.

The meeting convened as arranged at 10 o'clock March 17. After an opening address by the Forester the committees designated scattered to their committee rooms and settled down to work on the outlines already prepared for each subject. This study, discussion, and development of principles and methods continued for 2½ weeks. Because of the arrangement of the committee rooms a great deal of interchange between committee chairmen and committee members was possible during the 2½ weeks of committee work. This greatly facilitated general participation and mutual understanding as each committee shaped up its conclusions and report. On the afternoon of Wednesday, April 2, general sessions started and continued until the afternoon of April 9. This week was devoted to the consideration of reports of the eight Districts. The reports were first read and then discussed, often at considerable length. In every case the committee was requested to restate different portions of its report. After all reports had been read and discussed in this manner and re-writes prepared by the various committees they were brought up again for consideration of the re-writes and final approval of the reports as a whole.

Three and a half weeks of common effort developed sympathetic understanding on the part of all toward the individual problems and difficulties of each region and the poor old overworked word "correlation" has taken on a new and more acceptable meaning as a result of the labors of the conference.

- - - - - - - -

The bill authorizing an appropriation of $900,000 for constructing and equipping buildings at Madison, Wisconsin, for the Forest Products Laboratory has passed both Houses of Congress and is now in the hands of the President. The bill also authorizes the Secretary of Agriculture to accept from the Regents of the University of Wisconsin the donation of a building site. The current appropriation act for the Department of Agriculture contains an amendment added by the Senate appropriating $900,000 to carry out the provisions of the authorization bill.

- - - - - - - - -

District 2 is making progress with its Camera Points study under the direction of a special committee appointed by the District Forester. A number of old photographs have been carried to the field and the points from which they were taken located definitely on the ground. Arrangements are being made to mark these places with permanent stakes and to take repeat photographs. Almost all of the Forests are undertaking the work so that the range of conditions found in the District will be adequately covered. In this way a permanent long-time record showing silvicultural and range conditions in graphical form will be available.

- - - - - - - -

The Hama-Hama logging company operating on and near the Olympic Forest is trying out a new wrinkle for putting out fires caused by the friction of wire rope in donkey logging. The company uses a sky-line system and has developed some good sized water containers with hose attached at the bottom which can be run out on a trolley to a point over the fire and thus give a gravity feed for using the hose to put out such fires. Everyone hopes that the opportunity to test this device in action will be infrequent.

AIR PILOTS RECEIVE WARNING

The hazard to which forests, grain fields, grass land, and property are exposed through lighted cigarettes being dropped from airplanes was recently called to the attention of Colonel Clarence M. Young, Assistant Secretary of Aeronautics, Department of Commerce, by Acting Secretary of Agriculture Dunlap. As a result, Colonel Young has advised the Secretary that he has sent the following letter to all pilots of whom they have a record - some 9,000 in mumber.

"As a result of various tests conducted by the Department of Agriculture it has been ascertained that burning tobacco dropped from aircraft will, under certain circumstances, ignite underbrush, dry timber, etc. Specific attention has been directed to the fact, and a request made that the Department of Commerce promulgate suitable rules and regulations in the premises.

"There now exists in the Air Commerce Regulations a prohibition in the matter of dropping or releasing objects from aircraft which will endanger life or damage property. Burning tobacco, such as cigars or cigarettes, are definitely within the meaning of the provision. Therefore, it constitutes a violation of the Regulations, including the Air Traffic Rules.

"It is already known that a number of the air transport organizations have posted suitable warning notices in the cabins of their aircraft, and that a precaution of that character is proving effective as far as the passengers are concerned. However, such a warning should be provided by all air transport lines and its observance should be exacted; also, and of equal if not greater importance, the pilots of such lines, including mail as well as passengers, should be given specific instructions for their own observance in the matter of throwing out lighted cigars, cigarettes, etc.

"The necessity of giving effective application to the foregoing cannot be too strongly emphasized, and complete cooperation on the part of all air transport operators and pilots is most essential.

The Department of Commerce is sending a similar communication to the various air transport organizations whether they are transporting passengers, mail, or merchandise.

POWER GENERATED FROM NATURAL GAS IN CALIFORNIA

Preparation for and actual application of use of natural gas for the generation of electrical power in California was of utmost importance during the past year according to a statement of E. W. Kramer, District Engineer of the Forest Service at San Francisco.

Gas pipe lines constructed into the San Francisco Bay region and the changing of the constructed steam plants of the Pacific Gas and Electric Company from the use of oil to natural gas were evidence of the changes taking place. Up to November 30 something over 14 billion cubic feet of gas has been used at the Long Beach steam plant of the Southern California Edison Company. This is equivalent to 2¾ million barrels of fuel oil. During the same period less than 22 thousand barrels of actual fuel oil were burned. For the year 1930 it is expected that this company will make use of over 15½ billion cubic feet of natural gas.

The total electrical output of California was 8,900,000,000 kilowatt hours, of which 72 per cent was generated by hydro and 28 per cent by steam plants.

California exceeds all States in the output of hydro, and is second only to New York in total output of electrical power. The total electric power generated in the United States for the year was about 97 billion kilowatt hours of which about 36 per cent was hydro power. California generated about 9 per cent of the total electric power in the United States.

During 1929 the new installation of electrical power amounted to only about 70 thousand kilowatts which was equally divided between hydro and steam. This relatively small increase was due primarily to the enormous amount of generating capacity placed in operation during 1928. With the 1929 additions the total generating capacity in California is 3,619,000 horsepower. - T. W. N.

SLIDE RULE ALMOST CORRECT

Ryle Teed, of the Columbia Forest, uses a slide rule on grazing fees, price of spuds, ranger diaries; fiscal suspensions, Columbia fires, and whatnot. In fact, he once wrote a piece about this cure-all. Ryle calls 'em "Brownies". Willis Ward of the Colville Forest got the bug, but he calls his "Heinz" (it's from 57 and there are 57 ways of getting there!) To show how these form "57's" work, this incident is reported from Aberdeen. A high school math professor was demonstrating the slid rule, asked for difficult multiplications, divisions, etc., for all of which he slid his rule, and gave an answer. Finally, one student asked "How much is 4 times 4?" The Prof. never hesitated - "Let's see; here it is he declared. "It is 15.99, almost 16." - District 6.

WHAT'S THIS?

From the Nursery Report D-5: "The posts in the fence about the nursery were in a very bad condition, so new steel posts were bought and a new fence put up."

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIV No. 17 WASHINGTON, D. C. APRIL 28, 1930.

PR WORK SHOWS TANGIBLE RESULTS IN FIRE PREVENTION AND SUPPRESSION ON THE DEERLODGE

By John B. Taylor, Deerlodge

Sometimes I have gotten discouraged at Public Relations work and have wanted to drop it and do something from which I could see definite, tangible results. It seems to me, however, that I have found some measurable results from Public Relations work.

Burning conditions for forest fires were quite similar in 1910, 1919, and 1929 on the Deerlodge Forest. If anything 1929 was the worst. Now let's look at some of the records, remembering that statistics for 1910 are incomplete.

1910.

Approximately 180 man-caused fires; little recreational use of the Forest; about 25 Forest officers; exclusive of firefighters; hostile public. Area burned uncertain.

1919.

131 man-caused fires; heavy use of Forest by public; 25 Forest officers exclusive of firefighters; indifferent to passively friendly public; 7,712.97 acres burned; control costs $20,359.91; damage $23,860.25.

1929.

45 man-caused fires; over 70,000 recreational visitors; nine Forest officers excluding firefighters; extraordinary cooperation from newspapers, organizations, and individuals. $8,695 control costs; 3,198 acres burned over; $6,300 damage.

Following the 1919 season, Supervisor Clark initiated an intensive P. R. campaign directed at specific fire causes. This has been continued. It is interesting to note that in addition to a decrease in man-caused fires the public is now participating in suppression activities. In 1921 "others than Forest officers" handled 48 per cent of the detection; in 1924, 80 per cent; in 1926, 89 per cent; and in 1929, 92 per cent, of the fires were discovered and reported by others than Forest officers.

Remember this is merely a progress report and not an announcement of a job completed. But if you could examine the records of all the years, which space limitations prevent my including here, you would agree that there is tangible, measurable progress more than commensurate with the effort expended. The one black spot is the smokers' fires. Last year this classification accounted for over 50 per cent of our fires and losses. We are going after that danger and when we have solved it I shall submit another report.

BEAVERS AND FORESTRY

By Rolland Huff, Whitman

One might think in the relation of the first to the latter, like the little boy who claimed credit for protecting the forests because he shot woodpeckers - that the beaver should be trapped because they cut down trees. For all we have done here in Oregon the last few years to protect beaver on the National Forests, it looks like we have taken that very attitude. If any Oregon Forest Ranger has not given this question serious thought, let him look his beaver colonies over on his next field trip and I will venture to say he will find only a remnant of what he had in 1923, when the State Legislature of Oregon opened the season to beaver-trapping on all lands in the State except National Forests and Parks. No, the season was not opened on National Forest land - but the vandals get the beaver just the same. I made an effort to save some of the colonies on this district of the Whitman Forest, but the odds were too much against me. The largest colonies were on private land inside the Forest, and operating from these areas the trappers sneaked out most of the remainder, with the exception of one colony in a ranger station.

In the December 2 issue of the Service Bulletin is an article on erosion and the methods employed on the Fremont National Forest to stop the lowering of stream beds and to bring back the grasses and willows that have been killed by being robbed of the moisture under which they previously lived. The article describes the building of dams across the streams at frequent intervals from the heads of the flats, thus bringing the water table back near the surface. This is the very thing that the beavers have done in practically all of our mountain meadows and streams where suitable feed for their habitat could be found. This they have been doing for centuries before white men discovered America.

Beaver fur of the Oregon country was one of the first luring factors of the Far West; long before gold was discovered in the hills or farms cut out of the wilderness. With the trapping of the beaver the stream beds began to cut down, lowering the water table - with the result that grasses and willows that held the soil died for want of moisture. Banks caved in and the channels began to straighten out and become swifter currents that carried the loosened soil on down to the sea. Question the old-timers, observe conditions for yourself, and you will find these conditions to be true. Not only did beavers hold in check the smaller streams, but you will find evidence where they have swung rivers back and forth across large areas of low lands, building up the valleys as the centuries went by. To those who are familiar with eastern Oregon, witness the Grande Ronde Valley in which I am told that Catherine Creek ran, before being canaled, over 200 miles in making about 12 miles as the crow flies. Much of this meandering was no doubt due to beaver work.

In 1899, some far-sighted men in the Legislature of Oregon saw that unless something was done soon the beaver would be exterminated in Oregon; that year they got a law on the statutes protecting beaver throughout the entire State. (A law of 1893 protected them in Malheur and Baker Counties, unless they were injuring premises.) So scarce had beaver become that the "Oregonian" of November 25, 1905, had this to say - "The animal is nearly extinct. It is as rare now in nature as is the Oregon coin called "beaver" money of the early time. All early explorers and settlers of the Oregon country were familiar with beaver. It was said a while ago that L. L. Hawkins of Portland, who is a naturalist and takes interest in fauna and flora, knows where there is now a colony or family of beavers not thirty miles from Portland - but will not tell, lest betrayal of their retreat might lead to their destruction." —— History of the Oregon Country.

Under the law of 1899 it was illegal to have beaver skins in one's possession and almost impossible to dispose of them. Beaver began to increase and by 1920 were quite plentiful and were scattering out into many streams where they had been exterminated. Then the blow came. In 1923 the Legislature opened the season on beaver and they could be trapped anywhere except on National Forest land and in Parks. Many men in the Legislature foresaw what would happen, but they were overpowered. Beaver pelts were worth too much money. We, as foresters, should have sensed the danger and should have made a special effort to save them, but we did not and now we are back near the beginning of our protection.

The Baker Rod and Gun Club, probably one of the largest and most active in the State, is making a stand on beaver protection. At its annual banquet in December, some very interesting talks were given on this subject. No doubt a tightening up of the law will come up before the next Legislature, and we should give the question a great deal of study between now and then, and be in a position to ably present our case. Check up on your beavers, Ranger.

SODIUM CHLORATE AS A PLANT-KILLER

By Daytonius, Washington

In the "Intermountain District Daily News" for January 5, 1927, was an account of a talk by a distinguished scientist at a forest research conference in which the statement was made that "sodium chlorate x (is) a good spray for weed eradication, it being non-poisonous to stock, although it has the disadvantage of being highly combustible."

Considerable interest seems to have been aroused in this chemical ($NaClC_3$) during the past three years as the following, very partial, list of publications dealing wholly or largely with it will show:

Latshaw, W. L., and Zahnley, J. W. "Killing field bindweed with sodium chlorate." Kans. Agr. Expt. Sta. Circ. 136. March, 1928.

do. "Experiments with sodium chlorate and other chemicals as herbicides for field bindweed." Journ. Agr. Res. 35: 757-767. (Oct. 15) 1927.

Aslander, Alfred. "Experiments on the eradication of Canada thistle, *Cirsium arvense*, with chlorates and other herbicides." Journ. Agr. Res. 36: 915-934. (June 1) 1928.

Talbot, M. W. "Field bindweed (*Convolvulus arvensis*)." July, 1928. 4 pp., mimeographed Bur. Plant Indus. leaflet.

Hansen, Albert A. "Eradicating quack grass with sodium chlorate." Journ. Amer. Soc. Agron. 20: 1120-1123. Oct., 1928.

do. "Two useful chemical weed killers." Purdue Univ., Dept. Agr. Extens., Div. Bot. Weed Lflt. 5, 1928. 3 pp., mimeographed.

Talbot, M. W. "Chemical weed killers." Apr., 1929. 6 pp., mimeographed Bur. Plant Indus. leaflet.

Shafer, E. G., Lee, O. C., and Neller, J. R. "Eradicating the bindweed with sodium chlorate." Wash. Agr. Expt. Sta. Bul. 235. June, 1929.

Since members of the Forest Service have become much interested in sodium chlorate as a possible means of getting rid of objectionable weeds in tree nurseries, poisonous plants, etc., it may be well again to emphasize that this chemical is a very dangerous one. The writer, frankly, is exceedingly skeptical as to whether it should ever be employed on National Forest ranges or in the forest because of its extremely high fire hazard and the numerous accidents to both man and beast that have attended its use, despite its acknowledged value as a plant poison. Its guarded use in such places as forest nurseries is, of course, another matter. It is of interest here to note that the earlier report that sodium chlorate is harmless to animals is evidently exploded. Messrs. Schafer, Lee, and Neller of the

Washington Agricultural Experiment Station, in the last publication listed above, state unequivocally that "sodium chlorate has a poisonous effect upon livestock if taken internally, although it is not so deadly as arsenic," this in addition to the fact that the salty taste it gives treated vegetation attracts livestock, and the fact that the mere friction of animals or persons walking through such vegetation has been known to cause explosions and severe fires. All in all, sodium chlorate would seem a pretty safe bet to "lay off of" on the National Forests.

NEW FORM OF FOREST HAZARD

By L. F. Kneipp, Washington

Last summer Charles W. Langridge visited the Mt. Elwell Lookout in the Plumas National Forest. In order to get a better view he stood up on a rather wabbly bench, tipped over, and fell over a cliff a distance of 10 feet, cutting his head and breaking both wrists. A doctor was called from a nearby resort, but in the interim Forest Lookout Bortner rendered such excellent first-aid in the form of a bandage on Langridge's head and splints on his wrists that he was able to walk out on his own feet. Notwithstanding this effective attention, however, he submitted a claim for compensation in the sum of $281.75, which in due time was laid before Congress in the form of a bill for his reimbursement. The Department's report on the bill was adverse.

The natural disposition of every Forest lookout is to be hospitable and informative. Visitors usually are welcome breaks in the monotony of a lookout's work, and the opportunity to accomplish some very effective Public Relations work is of a high order. This Plumas instance, however, indicates that unless the lookout desires to initiate a side line of medical practice and to spend considerable time in lining up the data required by Congress in its consideration of claims for compensation, he had better exercise a restraining influence upon such of his visitors as are disposed to take unnecessary risks of injury.

NATIONAL FORESTS TO BE FEATURED

To picture the true part the National Forests play in the life of America and to present their highly interesting and dramatic history, the July Issue of AMERICAN FORESTS AND FOREST LIFE, the Magazine of The American Forestry Association, Washington, D. C., is to be devoted exclusively to the National Forests. "This special issue, bigger and more beautifully illustrated," says the Editor, "will depict National Forest history by the men who made it, and will present their purposes by the men directing them."

Outstanding among the articles to appear in this issue are: "Your National Forests," by Arthur M. Hyde, Secretary of Agriculture; "The National Forests Today," by R. Y. Stuart; "The Story of the Forest Ranges," by Will C. Barnes; "The Search for Forest Facts," by Raphael Zon; "An Evaluation of Wild Life as a Forest Resource," by Aldo Leopold; "How the National Forests Water the West," by E. N. Munns; "When Forests Were Young," by E. T. Allen; "The War on Fire," by Fred Morrell; "Forest Recreation Comes of Age," by L. F. Kneipp; "How National Forests Were Won," by Gifford Pinchot; "June Eleventh," by E. A. Sherman; "Evolution of Forest Transportation," by John Guthrie; "Our Eastern National Forests," by Philip Ayres; "Singed But Safe," by Wallace Hutchinson; "How Times Have Changed," by R. L. P. Bigelow; "We Found the Wild in Wilderness," by Jesse Nelson; "Patrolling the Forest Hinderland," by A. C. McCain; "Trout Trails of National Forests," by Paul G. Redington;

"Canoeing on the Superior," by W. L. Barker; "The Forest Engineer," by S. B. Show; "The First Ranger Station," by J. W. Powell; "The Mule Express," by J. C. Frohlicker; "The Great Fire," by J. B. Halm; "Forest Builders of the Lake States," by E. W. Tinker; "The Ranger's Boss," by Mrs. Julia T. Shinn; "National Forests of the Northland," by H. F. Heintzleman; "Old Timer," by W. Mendenhall; and many others.

The Editor of AMERICAN FORESTS AND FOREST LIFE says that this issue will be limited. and that advance orders for copies may be placed with The American Forestry Association. Lenox Building, Washington, D. C. The price of copies will be thirty-five cents.

THE RECOGNITION OF EROSION ON FOREST AND RANGE LAND

By C. L. Forsling, Great Basin Exp. Sta.

Erosion by water is one of the major factors causing modification of the earth's surface. It has continued for time immemorial, ever since there first was opportunity for water to run down hill, and it will take place just so long as water continues to run down hill.

There are two major kinds of erosion - normal and abnormal. It is important that each of these be recognized insofar as possible. Normal erosion is that which has been in the past, and still is to a considerable extent, active in the general leveling down process of the earth's surface. It is responsible for much of the present topography and soil. It was especially active in the early ages, but over much of the earth's surface where vegetation became established, this normal erosion has been greatly slowed down and on the more densely vegetated areas almost stopped. Some of its effects may be more fully appreciated when it is realized that more than 11 thousand feet of material have been removed from the top of the Kaibab Plateau which now rises a mile above the present level of the Colorado River.

In many places this normal erosion is still very active, including such places as the Badlands of the Dakotas, the Grand Canyon of the Colorado, and Cedar Breaks and Bryce Canyon in Utah. Many scenic places are the products of still active normal erosion. In most other places where a good cover of vegetation became established. this erosion has been slowed down but is still going on more or less imperceptibly.

Where the vegetation has been more or less destroyed by one cause or another, be it fire, overgrazing by domestic or wild animals, cultivation or some other biological cause, the rate of erosion of the surface soil once held quite securely in place, is increased. This is abnormal erosion. It is the kind of erosion we need to be greatly concerned about. Its consequences are the destruction of the soil, more rapid runoff and hence a lessened conservation of the water supply, the destruction of aquatic life in streams. the choking of stream courses, the silting of storage reservoirs and irrigation systems and the deposition of silt in places where it lowers the value of land. This is the kind of erosion it is important to control, but its recognition is an essential forerunner to control. - From "Report of Regional Forest Protection Board" Calendar Year, 1929

PR FRONT AND CENTER

In its report of the Mississippi Valley Flood Disaster of 1927, which presumably had a wide national distribution, the American National Red Cross has this to say:

"The proponents of the theory that the great Mississippi floods are caused by deforestation must surmount the testimony of Garcilaso de la Vega, who witnessed the great flood of 1543, which certainly was not caused by denuding land of trees." - L. C. PRATT, Chugach

YE EDITOR DISCOVERS

The National Forest receipts for the first nine months of the current fiscal year show an increase over the same period of the previous year of $505,052.04, the total receipts to date being $4,406,981.64 as against $3,901,929.60. The major portion of the increase, $397,000, occurs in timber. Grazing registered a gain of $99,000, special uses $9,000, and waterpower $3,000. There were slight reductions in the occupancy trespass and fire trespass receipts, the amounts being $3,000 and $1,770, respectively.

All Districts showed increases with the single exception of District 6. The figures by Districts are: District 1 - $43,000; District 2 - $62,000; District 3 - $47,000; District 4 - $58,000; District 5 - $275,000; District 7 - $225,000; District 8 - $12,000; District 9 - $25,000. The decrease in District 6 totaled $247,000.

Each of the three quarters of the fiscal year to date showed an increase over the corresponding quarter of the preceding year. If the same ratio of increase is maintained in the fourth quarter the receipts for the fiscal year will aggregate seven million dollars, the largest total in the history of the Service. The fiscal year 1929 was the heaviest year to date, the gross receipts for that year being $6,299,801.86.

- - - - - -

District 7 during the first half of April, particularly during the period April 11-14, suffered heavy forest fire losses in the Southern Appalachian and Arkansas Forests. A disastrous fire on the Natural Bridge, presumably caused by lumbermen, burned more than 6,000 acres of timbered and good cut-over National Forest land. Two large fires burned on the Shenandoah at the same time, one on the south end of the Massanutten District with a loss of approximately 3,000 acres of National Forest land, and the other on the north end of the Lost River District. While the latter threatened Government land, it was held to an area of 5,000 acres outside, with no loss to the National Forest. An outburst of incendiarism on the Ozark during very dry weather was checked after considerable loss through the employment of bloodhounds.

- - - - - -

Committee reports as approved by the entire group of the District Foresters' Meeting will be sent to the Ogden Supply Depot for printing as soon as the Forester's comments on the reports are completed.

- - - - -

On Tuesday, April 15, the Senate passed Senator Norbeck's bill under which mining locations in the Black Hills and Harney Forests will give the locator right only to the mineral values plus the use of such part of the surface as may be necessary for mineral development, the United States retaining the right to control such part of the surface as is not required in mineral development and the use of the products thereof. The bill now goes to the House for action and its success in that body will depend in large degree upon the effectiveness of the educational work which the various Districts have been able to carry on in the field with relation to this measure. While the pending bill relates only to the Black Hills and Harney Forests, Senator Norbeck has indicated that if he is successful in securing its enactment he will then consider the introduction of a general bill.

- - - - - -

Following the District Foresters' Meeting various other conferences between the District Foresters and Branch Chiefs were held for the purpose of making specific application of the principles developed by the four weeks meetings to the allotment of funds for the fiscal year 1931.

- - - - - -

The receipt recently of a National Parks Association bulletin inspired Mr. Sherman to a calculation of the relative area of the National Parks as compared to the National Forests. He found it to be 1/20 of the net area of the National Forests and 1/23 of the gross area. According to the latest statistics the gross area of the National Parks is 12,118 square miles, or 7,754,500 acres.

- - - - - -

District Fiscal Agent Cousins of District 6 is on detail in the Washington office for a period of approximately two months and is working in connection with Mr. McGowan on the Northern Pacific Land Grant case.

CHANGE IN INTER-DISTRICT BOUNDARIES

The Davenport Hotel at Spokane, Washington, is one of the spots which rejoice the heart of every traveler and is a District possession to be highly prized. Up to this time it has been safely within the limits of District 6 but patronized most extensively by members of District 1. This may be the explanation for the most recent inter-District boundary change, although officially of record it is that the forest situation in extreme northeast Washington ties so closely with the Kaniksu, Kootenai, and Coeur d'Alene National Forests that it properly should be handled by the District charged with the administration of those Forests.

Whatever the reason may be, Kelley and Buck have agreed upon and the Forester has approved a new inter-District boundary by which all that part of the State of Washington east of the Columbia River, the Spokane River, and the west boundary of Spokane County will hereafter be a part of District 1. While only a small part of this territory is now in the Kaniksu National Forest, the cut-over land problem in Stevens and Pend Oreille Counties is becoming so acute that local people are now seriously considering the advisability of extending Federal control over additional areas. The need for more intensive cooperative fire protection is also gaining recognition. Through this latest acquisition District 1 consequently secures some new problems and responsibilities of great importance. - L. F. K.

X-RAY STUDIES ON WOOD SHOW PROMISE

Results obtained in preliminary studies in cooperation with the University of Illinois indicate that the X-ray may yield information on the chemical and physical properties of wood that can not be obtained by any other known means. The preliminary studies were made on wood specimens of assorted species and on modified cellulose.

The character of the pattern produced by X-rays reflected from the specimens seemed to indicate differences between wet and dry wood, "compression" wood and normal wood, light wood and dense wood, and between species, that could not be registered by any other familiar means. - From the Forest Products Laboratory Progress Record, January, 1930

BELIEVE IT OR NOT

By Allen H. Hodgson, D. 6

The International Wood and Sulphite Company of Seattle, operating in the Puget Sound and Grays Harbor regions makes and distributes to the pulp and paper mills, owned by the Crown-Zellerbach interests, 450,000 units of pulp chips and 200,000 units of hogged fuel per year. (A "unit" is equal to 200 cubic feet). It is estimated that about 500 feet b. m. of solid wood is required to make a unit of pulp chips and the heating value of a unit of hogged fuel is equal to that of one-half barrel of crude oil. Upon this basis it would take 225,000,000 feet b. m. of logs and 100,000 barrels of crude oil per year to meet the requirements of this company. The surprising thing about this operation is that most of the pulp chips and all of the hogged fuel are derived from sawmill waste, which, before the expansion of the pulp and paper industry on the Pacific Coast, was destroyed in the sawmill refuse burners.

COUNTY AGENTS ADOPT SALES LETTER PLAN

That circular letters which have a worth-while story to tell and tell it in a forceful manner are not discarded before they are fully read has been proved by County Agents C. S. Adams of Berks County and J. B. McCool of Clinton County, Pennsylvania. A series of "Want-Solution-Action-Satisfaction" letters were issued by Mr. Adams on the subject of woodlot management and by Mr. McCool on planting forest trees. These letters have contributed very materially to the success of woodland improvement in these counties.

The following is typical of the four-in-one, "Want-Solution-Action-Satisfaction." letter being sent out by the County Agents in Pennsylvania:

Dear Woodland Owner:

You want to make improvements about your home; put in new labor-saving devices; buy a radio or some other improvement to add comfort to your home. All these require the expenditure of money.

You may secure some money for these purposes by THINNING your woodlot, and at the same time, leave your woodlot in a better condition. Many farmers have secured $20 to the acre by selling the firewood or mine-props secured in cutting the crooked, short bushy-crowned, diseased, slow-growing, poor timber trees and leaving the straight, tall, well-crowned, sound fast-growing, good timber trees.

Many of these winter days spent in thinning the woodlot will help secure funds to bring added comforts to the home, and at the same time leave the woodlot in a better and more VALUABLE condition.

Very truly yours,
County Agent

- - - - -

It will be a salutary thing for forestry to be purged of its lumber famine complex and to see and sell forests in a clearer perspective of diversified wood and land crops, conservers of soil and water, habitats of wild life, moderators of climate, providers of outdoor recreation - From American Forests & Forest Life

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people* * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson, Secretary of Agriculture
February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIV No. 18 WASHINGTON, D. C. MAY 5, 1930.

HOW OLD IS A TREE?

By Arthur Koehler, Forest Products Laboratory

A man, some say, is as old as he feels; others say he is completely overhauled every seven years and that all used parts are replaced at least once within that time. But how old is a tree? A bespectacled stem analyst will hover over the stump of a fallen monarch of the forest and count all the growth rings he can see and then add a carefully derived figure of the age required for the average seedling to reach stump height. On completion of this computation he shouts, "I have it. This tree was 967 years old when Halley's comet was discovered." But was it?

Is that now prostrate carcass which once "did wear a nest of robins in her hair" that old? Absolutely not. The tiny innermost cone of the first year's growth may be that old (if the investigator did not err in his counting on account of a spider crawling under the magnifying glass or if he did not fall prey to some of the other hazards that the stooped-over researcher is apt to run into in the forest or vice versa); but all the rest of the tree is younger--some of it is not yet a year old. Kind reader you would not say that a section of land was two miles away when only its furthermost corner was that distant but all the rest of the land lay between you and that farthest extremity. Then be careful how you speak of the age of trees.

A figure which better expresses the age of the whole tree may be derived by computing the volume of each yearly increment, adding all the individual volumes together, determining the average, and finding the annual layer of growth that corresponds in volume to that average. The number of rings from there on out to the periphery best represent the age of the tree as is--or was. We will call it the true age quotient index factor. (This method, by the way, greatly reduces the error in determining the age of trees because of not knowing exactly how old the seedling was at stump height, for a few rings, more or less at that age, do not materially affect the location of the average ring.)

"Jimmeny Christmas", has no one thought of this before? Are all our vault-fulls of data on age of trees incorrect? Sad, but true. Where have our statisticians been all this while? Here is a whole universe of unexplored possibilities in the science of numbers! To what accuracy must each ring be measured in order to bring the error incident to measurement within that caused by irregularities in the width of each ring? How do variations in rate of growth affect the true age quotient index factor? What short-cut formulas can be devised to bring the cost of computing the ages of trees within the value of the knowledge so obtained? And so on ad infinitum. The imagination fails. Time alone will pull us out of the complexities that this new problem opens up.

There is considerable satisfaction in digging up a new problem of this kind when the old ones are rapidly being solved one after another. It is hoped that within the next 20 years the minimum requirements as to necessary measurements and computations will be worked out. Then we will be able to determine at least approximately the true age of a tree.

Let's see,the annual ring representing the average volume of all rings will be somewhere between the iddle of the radius and the bark. (A good mathematician probably could figure out where it would be in an ideal tree--but then there are no ideal trees.) It surely would make trees a lot younger than we think of them as being. Question: Is this method also applicable in determining the age of the clinging vine? We will dismiss that subject for the present and confine ourselves to the tree.

Wait a minute! Are we correct after all? How do we ordinarily determine the age of a living thing? Age is calculated in terms of life. Life! LIFE! What, dead things don't count? How much of a tree is alive. How old is it? Merciful heavens, we have staggered from the brink of a mathematical precipice only to be staring into the abysmal depths of a biological canyon!

Yes, we are right. Dead ancestry can not be included in calculating the life span of the living. A tree is made up largely of empty cells which have lived and died and had their being. They must not be considered. How old are the oldest living cells in a tree? What of the youngest? What's the correct age of a tree? Oh, Allah, the mysteries of life indeed are deep!

We must give pause to our reeling brain. It is too much. After all, what difference does it make? Stem analysts probably will continue to determine the age of trees as they have been taught at their Alma Mater and have done for 20 years since. It is so difficult to get new ideas across.

But, to be serious: There is something back of all of this nonsense. Perhaps the big trees aren't over 2000 years old; possibly they are not even 200 years old although they have a string of dead ancestors hanging on which lived centuries ago, like the coral polyp which is attached to the skeletons of untold millions of predecessors. Maybe there is no such thing as maturity, old age, senility, or second childhood in trees. Maybe they are always young. Maybe they would live forever if the adversities of fate to which they are always subjected by the elements from without and the microphytes within did not sooner or later overpower them, not because they were old but because the law of probability claimed them for its own.

A tree forever young! Long live the tree!

AND SO IT GOES

By Charles Allen, Wichita

A bunch of wild turkey gobblers were on full dress parade. Tail feathers forming a half circle of royal adornment. Wings spread and close to sides, dragged the ground in vibrating tenseness with each proud and disdainful step. Purple topknots, elastic as rubber bands hung low over dull, whitish faces. Horny bills on arched necks. Eyes half shut cast squinty, challenging glances at each other as they strutted past in those precise circles. A queer mixture of brilliance, beauty, and stupidity. Around and around they went. Proud indeed of their kingly feathers. Each with the appearance of saying to the others as they came in close and even rubbed uniforms: "You're not much. I'm the whole show here. Go on and pull in your feathers."

The morning sun slowly climbed to a mountain top, peeked over through bare, oak branches and added brilliance to the scene. Brown, copper, green, gray, bronze. Delicately toned tints flashed and sparkled a rhythm of joyous colors back at the blazing disc of life and light.

In this band of vain, arrogant birds, but one remained humble. Standing in the center of that parade circle with head drooped, he cast doleful glances at his strutting neighbors. Making no display of spread feathers and elastic topknot, was this crippled turkey. And yet he might have said to them: "You're not the complete scenery hereabouts. I'm more symmetrical in this position. My feathers offer a more attractive display of gloss. The sun has a better opportunity to bring out my fine tints. Don't be so overbearing." However, his neighbors in their blindness knew nothing of this and continued to belittle him with their morning parade, until-

The breakfast bell rang, and the scene shifted. Some grain was thrown out. The arrogance of those haughty birds departed. A greedy appetite took possession, and with feathers contracted they made an aggressive dash for the early morning meal. A wild scramble was on. Flying into each other's faces. Scratching, fighting, running about in haphazard fashion and grabbing up grain. The lion's share depended upon action, and action there was.

The crippled turkey evidently knew his chances of competing with the others were not worth trying. At least he did not try, but well out of the scrimmage, limped slowly and painfully back and forth. Eager, yet timid, glances were cast at his feasting neighbors. Though crippled, drooping, and pathetic, his appetite was unimpaired. The grain was indeed attractive. Deciding to take a chance, at last he slowly made his way to a small mound of grain that had as yet escaped discovery by the other birds. When in the act of stretching his neck to the feast, another turkey rushed up, and ruthlessly knocked him aside, pummeled him with wings and left him standing in hopeless dejection. But other eyes were upon that little mound of grain. Before the one of easy victory could get his bill into the oats, another large, powerful gobbler dashed up and battle ensued.

While the battle raged the crippled gobbler gobbled up the spoils.

SASSAFRAS AGAIN

By E. N. Munns, Washington.

One thing puzzled me greatly as I read of the value attached in early Colonial times to the sassafras tree. The early settlers at Jamestown shipped great quantities of the wood to England and records indicate that several times whole shiploads of the wood, bark, and roots were shipped to the mother country. In New England records one finds references to the search for sassafras, which apparently was absent from the region known to the more northern colonists. The "why" of sassafras lay in its curative powers, being good for nearly every ill, a belief to which many of us can today attest, as no real American home was without its spring tonic - sassafras tea.

In the days before quinine, and even after it, sassafras was evidently food for fever. With the abundant mosquitos, chills and fevers were the common complaint. Hence, sassafras.

Apparently its curative powers were first recognized by Pedro Menendez de Aviles, Adelantado Governor and Captain General of Florida and the West Indies from 1563 to 1574.

Perhaps you will recall him as the exterminator of the Huguenots in Florida and the founder of St. Augustine. Incidentally, the life of Menendez reminds one greatly of that of Roosevelt as a superlative leader, builder, and organizer. In 1574 he returned to Spain bringing with him some soldiers who had been from two to ten years in the colonies. One of the contemporaries of Menendez writes:

"The soldiers who came from Florida in his company arrived in Seville well and strong, because of having used the water from sassafras wood. The faith they had in the virtue of this tree was so great, that Doctor Nicholas Monardes the first to write of medicines in the West Indies) certifies that when he was with some soldiers, informing himself about the tree, the greater part of them took a good-sized piece of it out of their pockets, saying: 'Here you see this wood, which we all carry with us to cure us if we fall ill, as we did in Florida,' and each would relate, with great exaggeration, the prodigy it had accomplished for him.

"Monardes, having faith in so many experiences as they reported, and seeing that the soldiers not under the command of the Adelantado and who had not used it, were weak, swollen and pale, in danger of losing their lives; reduced to a system the portion of water to be taken; for up to then the Indians, Spaniards, and Frenchmen had made use thereof without weighing or measuring it, in such wise that they followed no rule in the manner of doing the cooking; rather did each do it as appeared best to him, but always with good effect; and they felt that their health in the Indies was so safe with this remedy, that if any soldiers fell ill where the tree did not grow, either they brought it to them or they sent the sick men to Santa Elena or San Mateo in order that they might be cured of all the diseases they suffered from; whether they were chills or fever, light cases or severe ones; and so they were not afraid of being ill because they believed, as the Indians had taught them, that wood to be a universal remedy. It was only when there was hunger in the presidio that the soldiers refrained from drinking the sassafras water, for it increased until it became unbearable; and many times did they prefer to suffer from the illness which afflicted them, rather than endure the hunger that this water caused them."

PUMICE DUST NOW 'PAY DIRT"

By R. L. Fromme, Deschutes

For many years, at least since the "June 11, 1906 homestead" fiasco in the south end of the Deschutes Forest, the patient populace of Central Oregon has been resigned to the belief that the pumice dust, with which much of that region is bountifully adorned, is deficient, destitute if not definitely devoid of any profit possessing perquisites. The same assumption has saddened the history of lava cinders in this territory.

Now comes the revelations. A special use permit was granted to the California Stucco Projects Company of San Francisco for the removal of pumice material from an area of 100 acres - horizontal measurement, no vertical limit being imposed. However, they included a knoll "so that the excavation work might be on the level," they said. (Fair enough, and so it has been, to date.) Nobody knows how many cubic yards of pumice a given area can produce, but some pits for other purposes have indicated depths of thirty feet or more.

But what about the present timber and future forests, with the soil - e'en though poorly productive - all hauled away? The price so far is the usual gravel rate of 5¢ per cubic yard. An acre of this pumice, therefore, at a depth of one yard - or an acre-yard in irrigation parlance - will figure at about $241.50. Since the permittee must pay for any merchantable timber destroyed, the land value for pumice production - one crop only in our time - must be compared with the consequent loss in ability to grow future timber.

Exchange transactions place an average value not to exceed $2 for this class of land. It does not produce heavy nor rapid growing timber, hence the latter price is not far under the actual value for such purpose. Perhaps this land could produce $50 worth of timber (at present prices) in 100 years. Even so, it would require nearly 500 years to equal the immediate value of a yard-off-the-top of pumice. If a thirty foot depth is possible, then we must compare she present pumice value with the revenue from growing repeated crops of timber for 5,000 years. With two other applications now in the Bend office, we could probably raise the price to 10¢ per cubic yard, but that would be still more unfair to forestry, as the soil might be worn out anyway in 5,000 years, let alone 15,000.

What's wrong with this picture? Nothing, except that pumice does not run uniformly good for stucco production and it probably doesn't require many hundred acre-yards to glut the market. It takes close to 8 sugar sacks of pumice to equal a cubic yard, and the San Francisco firm filled and removed more than 6,000 such sacks, or 765 cubic yards, in its preliminary operations last fall. One-sixth of an acre-yard gone already,- and two more applicants becoming graspingly aggressive in appealing for permits covering one to two sections each instead of a mere 100 acres.

The lava cinders permit (mentioned previously in this article) is much more docile,- at least for the present. This otherwise worthless material has, however, modestly achieved some late local fame as a suitable substitute for sand and gravel in producing concrete. It is said to furnish the necessary firmness and strength without adding so much to the weight. At any rate, several car loads have recently embarked from the vicinity of Lava Butte on the Deschutes for the new Longview bridge, for some of the upper concrete features, floor, etc., where weight is of some consideration.

CASH - AND TIMBER

The Lumber Industry is groggy. The Paper Industry is worse. Substitutes are replacing wood all along the line. The Forest Service is not pushing timber on the market. But more National Forest timber was paid for during the nine months July, 1929 - March, 1930, than in any corresponding period in the history of the Service. Timber sale receipts for this period were $3,166,273, and were $404,275 more than for the same months in F. Y. 1929. In 1930 the normally dull quarter-year, January-March, gave sale receipts $179,000 larger than in 1929.

All Districts except D-6 are ahead of their records for 1929. District 7 is all puffed up at being, even temporarily, in third place, and hints that there is nothing temporary about it. A gain of over 100 per cent is enough to make a District a bit chesty, except when talking allotments. Even the "watered stock" Districts, 8 and 9, contribute handsomely, according to their opportunities and means, to the total. District 5 is ahead of D-6, and D-2 is barely ahead of D-1, with the low District in each case pointing confidently to their June quarter records in previous years. If D-2 still had the swamps and lakes of Minnesota, it would feel safer.

And if the sales now being advertised, in response to urgent applications, are all bid in and work on them starts promptly, further increases are in prospect. The logger and lumberman are still doing business. Few die and none quit. More of them are reaching back into the Forests for the timber they must have, after cutting their own. Gradually, one working circle at a time, the National Forest timber output is climbing toward full use under sustained yield. Already the struggle is to hold the cut at the sustained yield figure in some circles, although in most cases there is still an undercut, and for the Forests as a whole we have a 500 or 600 per cent margin. - E. E. C.

YE EDITOR DISCOVERS

Informal reports from District 1 are to the effect that unusually favorable snow conditions have made it possible to start active work on the big insect control project on the Coeur d'Alene Forest earlier than was expected. By the middle of April camps had been established and spotting crews were at work. Treating crews were expected to be busy by April 21. This is the biggest control project the Forest Service has ever undertaken and puts a big strain on the administrative organization supply overhead.

- - - - - -

The long awaited preliminary report of the field survey division of the Personnel Classification Board has been received. So many things pertaining to the classification of the field remain unsettled that it is not possible to make any statement as to how satisfactory the report is from the standpoint of the Forest Service. The final publication of this report calls for a large amount of careful study and well planned action, and it is very fortunate for the Service that Mr. Pooler is already in Washington and able to devote his whole time to the subject.

- - - - - -

Dean T. C. Spaulding, of the Forest School of the University of Montana has announced in a letter to the National Lumber Manufacturers Association that the school will be transformed from a school of silviculture to one of wood technology. It will at once provide a forest products laboratory that will cooperate with the research work of the U. S. Forest Products Laboratory and of the National Lumber Manufacturers Association, giving especial attention to the woods of the Inland Empire region.

One of the reasons given by Dean Spaulding for this change is that there are a large number of well-established experiment stations and research organizations whose attention is mainly directed to the growth of forest products but with the exception of what he terms as the "magnificent work" of the Forest Products Laboratory at Madison, and occasional but more or less sporadic efforts elsewhere, little attention is being given to a better and more profitable utilization of forest products.

"As I see it," Dean Spaulding says, "utilization has become the narrow-mouthed neck of the forest bottle, and unless we can assure ourselves of a continuous and profitable use of the wood we are producing the whole forest structure must fail. From the standpoint of private forest land owners, long rotations are out of the question. The problem is a comparatively short growth period and a determination of a method of utilization of the smaller material. Theorize as much as we will, forest production must be put upon a profitable basis or forest production will fail. To obtain a profit-bearing operation means new uses, better use, elimination of waste, and the establishment of by-products plants in connection with milling enterprises."

- - - - - -

A new series of silviculturist examinations (assistant to principal grade) to fill merchantable timber destroyed, the land value for pumice production - one crop only in our time - must be compared with the consequent loss in ability to grow future timber.

Exchange transactions place an average value not to exceed $2 for this class of land. It does not produce heavy nor rapid growing timber, hence the latter price is not far under the actual value for such purpose. Perhaps this land could produce $50 worth of timber (at present prices) in 100 years. Even so, it would require nearly 500 years to equal the immediate value of a yard-off-the-top of pumice. If a thirty foot depth is possible, then we must compare she present pumice value with the revenue from growing repeated crops of timber for 5,000 years. With two other applications now in the Bend office, we could probably raise the price to 10¢ per cubic yard, but that would be still more unfair to forestry, as the soil might be worn out anyway in 5,000 years, let alone 15,000.

What's wrong with this picture? Nothing, except that pumice does not run uniformly good for stucco production and it probably doesn't require many hundred acre-yards to glut the market. It takes close to 8 sugar sacks of pumice to equal a cubic yard, and the San Francisco firm filled and removed more than 6,000 such sacks, or 765 cubic yards, in its preliminary operations last fall. One-sixth of an acre-yard gone already,- and two more applicants becoming graspingly aggressive in appealing for permits covering one to two sections each instead of a mere 100 acres.

The lava cinders permit (mentioned previously in this article) is much more docile,- at least for the present. This otherwise worthless material has, however, modestly achieved some late local fame as a suitable substitute for sand and gravel in producing concrete. It is said to furnish the necessary firmness and strength without adding so much to the weight. At any rate, several car loads have recently embarked from the vicinity of Lava Butte on the Deschutes for the new Longview bridge, for some of the upper concrete features, floor, etc., where weight is of some consideration.

CASH - AND TIMBER

The Lumber Industry is groggy. The Paper Industry is worse. Substitutes are replacing wood all along the line. The Forest Service is not pushing timber on the market. But more National Forest timber was paid for during the nine months July, 1929 - March, 1930, than in any corresponding period in the history of the Service. Timber sale receipts for this period were $3,166,273, and were $404,275 more than for the same months in F. Y. 1929. In 1930 the normally dull quarter-year, January-March, gave sale receipts $179,000 larger than in 1929.

All Districts except D-6 are ahead of their records for 1929. District 7 is all puffed up at being, even temporarily, in third place, and hints that there is nothing temporary about it. A gain of over 100 per cent is enough to make a District a bit chesty, except when talking allotments. Even the "watered stock" Districts, 8 and 9, contribute handsomely, according to their opportunities and means, to the total. District 5 is ahead of D-6, and D-2 is barely ahead of D-1, with the low District in each case pointing confidently to their June quarter records in previous years. If D-2 still had the swamps and lakes of Minnesota, it would feel safer.

And if the sales now being advertised, in response to urgent applications, are all bid in and work on them starts promptly, further increases are in prospect. The logger and lumberman are still doing business. Few die and none quit. More of them are reaching back into the Forests for the timber they must have, after cutting their own. Gradually, one working circle at a time, the National Forest timber output is climbing toward full use under sustained yield. Already the struggle is to hold the cut at the sustained yield figure in some circles, although in most cases there is still an undercut, and for the Forests as a whole we have a 500 or 600 per cent margin. - E. E. C.

YE EDITOR DISCOVERS

Informal reports from District 1 are to the effect that unusually favorable snow conditions have made it possible to start active work on the big insect control project on the Coeur d'Alene Forest earlier than was expected. By the middle of April camps had been established and spotting crews were at work. Treating crews were expected to be busy by April 21. This is the biggest control project the Forest Service has ever undertaken and puts a big strain on the administrative organization supply overhead.

- - - - - -

The long awaited preliminary report of the field survey division of the Personnel Classification Board has been received. So many things pertaining to the classification of the field remain unsettled that it is not possible to make any statement as to how satisfactory the report is from the standpoint of the Forest Service. The final publication of this report calls for a large amount of careful study and well planned action, and it is very fortunate for the Service that Mr. Pooler is already in Washington and able to devote his whole time to the subject.

- - - - - -

Dean T. C. Spaulding, of the Forest School of the University of Montana has announced in a letter to the National Lumber Manufacturers Association that the school will be transformed from a school of silviculture to one of wood technology. It will at once provide a forest products laboratory that will cooperate with the research work of the U. S. Forest Products Laboratory and of the National Lumber Manufacturers Association, giving especial attention to the woods of the Inland Empire region.

One of the reasons given by Dean Spaulding for this change is that there are a large number of well-established experiment stations and research organizations whose attention is mainly directed to the growth of forest products but with the exception of what he terms as the "magnificent work" of the Forest Products Laboratory at Madison, and occasional but more or less sporadic efforts elsewhere, little attention is being given to a better and more profitable utilization of forest products.

"As I see it," Dean Spaulding says, "utilization has become the narrow-mouthed neck of the forest bottle, and unless we can assure ourselves of a continuous and profitable use of the wood we are producing the whole forest structure must fail. From the standpoint of private forest land owners, long rotations are out of the question. The problem is a comparatively short growth period and a determination of a method of utilization of the smaller material. Theorize as much as we will, forest production must be put upon a profitable basis or forest production will fail. To obtain a profit-bearing operation means new uses, better use, elimination of waste, and the establishment of by-products plants in connection with milling enterprises."

- - - - - -

A new series of silviculturist examinations (assistant to principal grade) to fill vacancies and to provide for expansion at the forest experiment stations has just been announced by the Civil Service Commission. Applications must be on file by May 28.

Statements from Forest Supervisors regarding the personnel management discussion course given last winter are being received. These provide valuable material which is being studied by the Forester, Headley, and Keplingre, who is here on detail.

The Southwestern Division of the Association for the Advancement of Science meets in Tucson April 21-26. During that same week Dr. Schantz, President of the University of Arizona, will also hold a conference with those interested in range management, range research, and related subjects. It is understood that Dr. Schantz has in mind the development of a research program which will cover the whole State and it is possible that an investigation of the Kaibab and Tusayan Forests in their relation to the Grand Canyon National Park will also be considered. R. R. Hill is the Washington office representative.

NELSON FERRIS MACDUFF

By John D. Guthrie, D. 6

Nelson F. Macduff, Forest Supervisor and Senior ember of the Society of American Foresters since 1911, came to a tragic and untimely end late in the afternoon of April 4, 1930, near McKenzie Bridge, within the Cascade ational Forest of which he had been Forest Supervisor since 1919.

Going along a beautiful forest trail over which he had walked many times and which he had well loved, a bullet from a gun in an unknown hand struck him down. He fell in a grove of young Douglas firs, and his Rangers found him there early the next morning, stretched out quietly and peacefully in his last, long sleep in a forest he loved so well.

Born on July 2, 1883, in Ohio, one of a family of five sons and a daughter of an Episcopalian minister, he had been reared in Michigan. Long before he had left high school in Flint, Michigan, he had chosen forestry as his life work. Graduating in forestry at the University of Michigan in 1907, with high honors and election to Sigma Xi, he passed the forest assistant's examination and came West as a forest assistant, to the Siskiyou Forest, Oregon.

Promoted to Assistant Supervisor of the Suislaw Forest in 1910, and after special work out of the District office in Portland on several Forests for several years, he became Forest Supervisor of the Cascade Forest in 1919.

In his eleven years administration and protection of this important timber Forest he labored earnestly, faithfully, and efficiently. He was responsible for its fire detection and communication systems being developed, many roads and trails being built, and a large timber sale made to utilize a big body of over-mature Douglas fir. He took a great pride in his Forest, and true to his Scottish forebears, was relentless in his efforts to provide protection for it, thereby incurring the enmity of the malicious and lawless elements.

During his eleven years residence in Eugene he made many warm friends, not only among the faculty of the University of Oregon, but among the leading business men of the town. At the time of his death he was an officer of the Round Table of the Eugene Chamber of Commerce, a member of the Executive Committee of the Boy Scouts, and president of the local Kiwanis Club. He was held in no less high esteem by his brother Forest officers throughout the North Pacific District.

Macduff leaves a wife, Mrs. Alice B. Macduf, a graduate of the University of Michigan, and two children, Betty Ann, a freshman in the University of Oregon, and John, a senior in high school.

A forester of broad training and wide experience, with the highest ideals of his profession, keenly interested in forestry, holding to high standards of personal conduct for himself and his men, he made many friends both inside and outside the Forest Service.

Having a sound philosophy of life, possessed of a keen sense of humor, he valued most highly his family and his many friends, of whom he was always most considerate. His loss is a severe one to the U S. Forest Service, and to the profession, and a tragic one to his friends and brother officers.

THEY COME TO SEE AND HEAR

With the expansion of the work of the Southern Forestry Educational Project of the American Forestry Association in Georgia, Florida, and Mississippi, has come the ultra modern in forestry exhibits---a traveling broadcasting station, so to speak, that has for an added attraction varied and unique electrical displays and motion pictures, all flashing the message of forest protection, especially forest fire protection and prevention.

Practically every educational medium in forestry is provided in this new unit. The practice of woods burning is shown to be destructive by photographs, motion pictures, lantern slides, soil and grass dsplays, pamphlets and bulletins, and exhibits of actual burned and unburned trees, while the vast possibilities of trees and soil kept free from fire are introduced in practicable and simple ways.

It is equipped with an amplifying system by which the human voice or music can be heard a thousand yards away. When the panels ofthe truck are raised, more than seventy electric light bulbs and twenty flashers give brilliance to exhibits depicting practically every phase of forestry practice in the South. - E. K.

MOBILITY AGAIN

By F. V. Horton, D-6.

Having previously qualified as a mobility expert by virtue of 15 moves in 13 years, I wish at this time to maintain my standing through the testimony of my small daughter, who at 10 years of age has attained the 5th grade through attendance at 7 public schools in four different towns in two different States. Her collection of report cards is exceeded only by her collection of school books and pedagogic methods.

I stll maintain that mobility in the Forest Service is desirable and advantageous to the individual, yet I must admit that after 5:00 P.M. my opinion in this matter is largely in the way of a minority report.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIV. No. 19 WASHINGTON, D. C. MAY 12, 1930

SUPPRESS 'EM OR PREVENT 'EM

By P. A. Thompson, Colville

Reference is made to the unsigned article on page 2 of the January 27 Service Bulletin, entitled "A Fundamentalist."

I hope I may learn the name of this contributor. I hope that some day I may be able to shake his hand I would that we could spend a few hours together, preferably with our backs to a log, our pipes alight, a campfire throwing flickering lights against the tree trunks, the tinkle of a horse bell in our ears, and talk over this subject of "Forestry." I surmise we would agree upon many points. Our experiences have without doubt been similar in many respects, our conclusions are alike, and a chart of our guiding principles would point to the same goal.

I have lived the most of my life in this immediate vicinity. Nineteen years ago I first took a job in the Forest Service. Since that time I have been interested in and have worked at fire protection for the forests of the Pacific Northwest. For the last thirty years I have seen fires ravage our timber lands while the population stood by unconcerned. For twenty-odd years the Forest Service has preached fire prevention and forest protection but still, year after year, we spend large sums of money to fight man-caused fires and suffer huge losses. Has our preaching been in vain? Let's admit frankly that, by and large, it has! Our lack of results proves that it has.

We've spent thousands, yes millions, of dollars on research; we've spent money and thought on expensive plans for forest management, for working circle management; we've talked sustained yield; we've studied annual growth and the hundred and one things related to timber culture, but the most fundamental job of all (for the Pacific Northwest), fire prevention, has never been given its rightful place in our budgets.

Without adequate fire prevention and protection, without protection much more effective than we've given this Pacific Northwest in the past twenty years, forestry can never be made to pay any appreciable per cent of its way.

Successful forest protection in a fire district will never be a success, whether the problem is man-caused fires or group-lightning fires, until we get the right kind of cooperation from our public.

On one Forest, settlers and other Forest users need to be taught care with fire. On other Forests, we need large numbers of eager, intelligent cooperators to "get" large numbers of lightning fires. Fundamentally the problem is the same.

I, too, "leave it to those whom it may satisfy to ponder the minute calculations of this and that. I will do that thing which I know is fundamental and give my strength to the protection of the forest from fire, and my thought to teaching this generation the urgency for an awakening to this problem of forest protection."

LEGISLATIVE SERVICE TO FIELD OFFICERS

By L. F. Kneipp, Washington

One of the subjects discussed at the recent District Forester's meeting was that of ways and means whereby the field officers may be kept currently in touch with the status of legislation affecting National Forest activities.

There is very obvious need that the various Districts should currently be kept in very full and complete touch with all legislative developments in which they have either a particular or a general interest, and their expressed desire seems to be a quite reasonable one. The people with whom they deal expect them to be currently informed with reference to the whole range of legislative activity, directly or indirectly related to forests, lands, personnel, and financial matters, and admission by them that they know nothing about any certain pending proposal reacts adversely.

To maintain the degree of legislative service desired by the Districts, the following steps will be taken:

1. upon the introduction in Congress of any bill which may be either of direct or indirect interest to any or all of the Districts, each District concerned will be furnished with a copy of the bill and a brief statement of explanation of its purpose or probable result so far as that is known to the Forest Service. If the Forest Service has reached any conclusion or formed any opinion as to the merits or demerits of the bill, that fact will be incorporated in the statement.

2. As soon as a bill is reported out, copies of the Committee report and also copies of reports of hearings, if any, will be sent to each District interested in the bill.

3. If any new developments occur with relation to a specific bill, as for example its amendment, or the presentation of new views by Departments or others, or its enactment or the initiation of action in pursuance of its terms, brief but adequate statements in connection therewith will be furnished the Districts promptly.

4. At the end of each month a brief statement will be issued showing the status of each bill in which the Forest Service is interested. This statement need consist of only three columns - one with the caption "No. of Bill," the second with the caption "Action in Senate," the third with the caption "Action in House," possibly a fourth would be desirable with the caption "Signed by President." Under the Senate and House captions status at the close of the period will be indicated, e.g. "Amended 4/15/30." or "Committee Hearings 4/15/30." or "Reported with Amendment or Without Amendment 4/15/30." or "Passed 4/15/30."

With a program such as proposed, the Districts will be keep currently in touch with the progress of all legislation, directly or indirectly affecting National Forest activities and thus be in a position currently to supply either to the Forester's office or to the public full information with reference to any particular measure.

LAND MANAGEMENT OR FORESTRY

By E. N. Munns, Washington

Somehow there seems to be developing the idea that our job is "Land Management," and this is becoming increasingly evident in our literature, speeches, and letters. To me the term smacks of Land Office days and to the ordinary individual conveys the impression that we are either in the Land Office or in the land business.

I am not a land agent of any kind. I am not in the real estate business and object to being grouped with "realtors" responsible for handling railroad lands, mining or oil lands, or urban or suburban development. I have no interest in land except as it produces a crop of forage or of trees.

I am a forester who believes in the forest and in proper forest management. I believe that forestry includes far more than land management, for he forest and the land are merely parts of the picture. I firmly believe in the relationship of forests to water and I submit that there is nothing in the phrase "land management" that conveys to any one that relationship. Is it that those who stress the idea of land management take this means of denying that relationship or have they forgotten it?

Personally, I'd hate to tell any one that I was a "Land Manager" or that my job was "Land Management." To me the phrase is about as thrilling and as satisfying as canteen water on the fire line in August. Are we not deceiving ourselves with grandiose words? Tell the man on the street that you are a Land Manager and see what he says;, then tell the next one that you are a Forester. What a whale of a difference a few words make!

In my estimation, the sooner we drop land management from our general vocabulary the better off we will be, and the closer we will hold to our ideals.

TO BURN OR NOT TO BURN

By William Ferwerda, Kaniksu

Since a good many Forest officers will be interested, perhaps, in the slashing and disposal of defective hemlock, I will give my experience on this area of the Dalkena Lumber Company Camp 12, four miles from Nordman, Idaho. I gained real experience here with slash burning - and experience is the best teacher in all lines of business.

It was a heavy stand of defective hemlock, the whole area consisting of 160 acres. In the late fall of 1928, 40 acres were slashed when the ground was covered with about five inches of snow. In the early spring of 1929 when there were from one to two feet of snow on the ground, I had six men slashing and two men lopping the limbs. On half of this area the limbs were lopped and on the other half no limbs were lopped. Around this area a space of 20 feet was cleared of all brush and the old logs, which were rolled against the slashing. A fire trail was made, the same as used in fighting fire. This work was all done by day labor at the rate of from $4 to $4.25 per day.

The 22nd day of September, 1929, we had a light shower of rain and on the 23rd a good shower. This was on Monday. On Tuesday, the 24th, I tried to burn at one corner of the slashing but I could not start it, even with all the dry weather we had had. On the 25th I tried again, but it would not burn. On the evening of the 25th the wind began to blow and was blowing hard all night. It was a drying wind. In the morning it was still blowing between 15 and 20 miles per hour in the right direction. As I had a sufficient crew to hold the fire, I decided to burn.

Since the slashing was right up against one side of the camp, I told the men to burn a strip away from the camp, so that there would be no danger. We had on hand one small pump, located in such a position that it could be operated on short notice. While the crew was burning this strip beside the camp, I went to one end of the slashing and started fires from there to the other side, and the fire started rolling toward the camp. I went back to the camp and told my men to be on the watch, as she was rolling fast. It was a wonderful sight and looked as if the fire was just rolling over the slashing. This slashing was a clean burn. Had the wind not been in the right direction, I believe that I would not have been able to burn the slashing this fall or at least it would have been a poor burn. Now it is a clean burn. A slash burn is altogether different from a forest fire. There was hardly any difference in the burn, that is, between the area that was lopped and the area that was not lopped. It was all a clean burn.

After the slashing was burned over, the ground was cold, and practically no duff was burned off the ground at any place. The reason for this was that the slashing was done in the late fall of 1928 and after the logging operation was completed. The brush from the logging operation and the defective hemlock on top of this brush protected the duff from getting dried out in the summer.

This area should produce one of the finest stands of reproduction. A few small spot fires resulted from this great slash burn which could not be prevented, but they were put under control at once and no undue spreading resulted.

The cost of slashing, lopping, making a fire trail around the area, burning the slash, and putting the spot fires under control amounted to $3,297.25 for 160 acres I believe the cost of burning the brush after the logging operation and thinning the area afterwards would have cost double this amount, perhaps more. At present, an area of 78 acres is nearly completed at a cost of $15.80 per acre. This latter area was not slashed by day labor but was let out to gyppos.-Clipped from D.1 Bulletin.

THE WORK OF THE SPECIAL LIBRARIAN

By E. Maude Stone, D.6.

It is not generally recognized that we District Librarians are special librarians in forestry. As such it is our duty to bring to the attention of foresters the special literature in their field, and to interest them in the use of books in the library. Ours is a highly specialized field, and I feel that any District Librarian, as a lover of books and a technician in her line, should cooperate with public libraries to the fullest measure, rather than attempt to duplicate them. I feel that it is not within the province of a forestry library to try to cover the entire field of human knowledge, particularly in the realm of the lighter or more ephemeral literature, or even the entire field of science To begin with, no District Librarian, if she keeps an up-to-date collection in her own special fields, will have either funds or time for those fields that are so well covered by public and State libraries.

I believe the forestry librarian should be a connecting link between the foresters and the public or State libraries in their special lines. It is her duty to know all of the library facilities in her own district and the States included in it, rather than to duplicate the work and the collections of these agencies already in existence. Many of the State libraries will send to persons in any part of the State a small library of 12 to 15 books on cultural subjects, the borrower paying the postage. These books may be exchanged for another group when the first one is read. In view of these many library facilities already in existence, it would seem to be the part of wisdom for the forestry librarian to confine her own work and collection to those specialized books and periodicals which will best serve the foresters in the District office and the field.

Some of my efforts along these lines have been to route the monthly list of accessions around the District office, and to run this list in the Six-Twenty-Six; to secure books and periodicals from the local public library; to do special reference and research work for individuals; systematically prepare bibliographies on special subjects for any forest officer; make personal purchases of books; review periodicals and route them to members of the District Office; calling their attention to the articles in which they are chiefly interested; as well as carry on the incessant routine necessary in a special library.

JAPANESE ARE WILLING TO PAY HIGH PRICE FOR REFORESTATION

Mr. Leon M. Estabrook, Agricultural Commissioner, in the Foreign Service of the Bureau of Agricultural Economics, at a recent meeting of many representatives from the various Bureaus, referred to the reforestation work conducted by the Japanese in Korea.

It appears that there are vast mountain sides completely denuded of vegetation that are washing and gullying with enormous losses to overflow lands valuable for food production. The slopes range up to 30 per cent and the planting of pines is done only after several years of intensive soil preparation in "nursery" spots by the growing of herbaceous plants as a nurse crop. The cost as quoted by Mr. Estabrook amounts to from $450 to $1,000 per acre. This seemingly incredible sum was fully authenticated by Mr. Estabrook by a careful check at the Forestry Experiment Station in Korea which has charge of the operations. The relatively low cost of labor should be borne in mind. It seems that the cost is placed as a charge against the Koreans. In this country by way of comparison, the most intensive and costly reforestation work that has been done probably has not cost as much as $100 per acre and been on a very small scale.

This example illustrates the high value of river bottoms in Korea for agricultural use. It also shows how the Japanes are building for the future. - W. R. M.

YE EDITOR DISCOVERS

Last year's reports indicate a steady and consistent growth in special uses of a recreational kind. At the end of 1929 there were in existence 10,340 residence permits, 1,044 cabin permits, 49 hotel permits, 802 resort permits, and 258 camp permits. District 5, with 5,876 residences, 138 cabins, 9 hotels, 301 resorts, and 90 camps, has a big lead over its nearest competitors District 6, which has 1,303 residences, 86 cabins, 8 hotels, 86 resorts, and 25 camps, and District 2, which has 907 residences, 249 cabins, 6 hotels, 132 resorts, and 51 camps.

- - - - -

The Department of Agriculture's Yearbook for 1930 has come off the press with 18 articles included by members of the Forest Service. With this Yearbook the Department has changed its policy in the matter of dating, and Yearbooks will henceforth carry the date of the year of issuance rather than the year surveyed. Hence there is no 1929 Yearbook.

PR has already undertaken the scheduling of Forest Service contributions for the next Yearbook (1931), and will be glad to have proposals from members of the Service as to subject, approximate length, and number of illustrations for articles they might wish to write. In keeping with the Department's policy of publishing short articles and many of them, a top limit of 1500 words is placed on each contribution.

- - - - -

During the annual convention of the United States Chamber of Commerce in Washington, April 28-May 2, a round table conference was held on "What's Ahead for Business in the Natural Resources Industries?" Former Forester Greeley acted as chairman of this conference.

- - - - -

On May 1 the boundary line between District 7 and District 9 was modified by including in District 9 the States of Iowa, Missouri, Illinois, Indiana, and Ohio. This change represents a territorial transfer between the two Districts and does not affect in any way the existing Research and Clarke-McNary Act inspection.

- - - - -

"Timber Growing and Logging Practice in the Northeast" by S. T. Dana, Technical Bulletin 166, the seventh in the series of Minimum Requirements reports, is now available for distribution. It is longer than any of the timber growing reports so far issued and not only sets forth the measures necessary to keep forest land productive in the region, but also gives in considerable detail cultural measures which have shown themselves to be beneficial to the practice of forestry. It is thus virtually a manual of silviculture for the region involved. Foresters should make it a point to read this publication.

- - - - -

During his recent visit here, District Forester Peck left a copy of a memorandum indicating that District 2 has attained a high state of preparedness for the coming investigations of the Committee on the Conservation of the Public Domain. The memorandum lists 187 separate areas at least tentatively suggested as additions to National Forests in that District, with an aggregate area of several million acres. It looks as if District 2 is strenuously endeavoring to offset the loss of that part of its domain now embraced within District 9.

- - - - -

As a radio "artist" District Forester Charles H. Flory evidently is a hit. Flory gave a talk on "Farm and Forestry in Alaska" over the National Broadcasting Company's network when he was in Washington the latter part of March. We would venture that the "fan mail" which has been pouring in ever since he went on the air would rival that of Rudy Vallee.

The May schedule of "Farm and Home Hour" talks on the NBC network includes an address by H. M. Sears, Supervisor of the Natural Bridge National Forest, who spoke on May 7 on "Vacation in the National Forests," and a talk on May 29 by H. N. Wheeler of the Washington office on "The Fire Menace to Forestry."

JOE GRAHAM RETIRES

Joe Graham, who has been continuously employed as a Ranger on the Mount Hood National Forest since 1909, has elected to retire from active duty on November 29, on which date he reaches 62 years of age. Joe has given the Government 21 years of effective work and throughout the entire period of his employment he invariably subordinated his own interests to those of the Service. In reply to an inquiry relative to his preference for retirement or extension he wrote the Forest Supervisor the following characteristic letter:

"With reference to your letter of February 25. There is a lot of things that I would like to do on this District before retiring. But it must always be thus. There is no such thing as finishing up everything to a point of satisfaction before quitting. I can not agree with your statement that I am 'perfectly able to carry on.' While I am active in the field my health is good and I feel all right, but leaning over this desk during the winter months is getting my goat, ***. So I have arrived at the conclusion that when my time comes, the proper thing to do is to step down and out and give a younger and better man a chance. I believe that in the end, my interest and your interest, and the interest of the Forest Service will be best served by such procedure."

ROLLING YOUR OWN

Technical Bulletin No. 168 contains interesting data on the control of the specific gravity of wood. If we read it aright, wood is strong or weak in direct proportion to its specific gravity. If you have the idea that, because a tree grows slowly and as a consequence has its rings close together its wood is stronger than a faster-growing tree, or one with a variable growth rate you will change it after reading this bulletin. The following is quoted from the conclusions:

> "From the preceding investigations of broadleaved species it is apparent that wood having the most uniform properties and the highest quality with respect to both strength properties and freedom from defects is produced, in the hardwoods, when the trees are grown sufficiently close together while young to cause removal of lateral branches, and are subsequently thinned sufficiently to maintain or increase the rate of diameter growth of the trees. Where dry sites or soils low in fertility are involved, the silvicultural treatment should also aim to benefit the water-holding capacity and the fertility of the soil.
>
> "Forest management may not anticipate a maintained or increased rate of diameter growth throughout the entire rotation, a maintained volume increment being all that is desired. However, with species such as hickory and ash, where the strength of the wood is of paramount importance, the additional effort required to maintain the rate of diameter growth up to a practical rotation period should be well worth while."

The title of the Bulletin is "The Application of Silviculture in Controlling the Specific Gravity of Wood." The author is Benson H. Paul, of the Madison Laboratory -H.R.K.

WANTED!

1. A good Cigar that will go out when dropped.
2. A Cigarette without a forest fire in a carload.
3. A Match that will not ignite the forest while the igniter is roaming about

4. More Campers who will drown their campfires before leaving.
5. Empty Cans that will roll to the garbage pits and drop in.
6. Sunday Papers that will decompose when thrown away.
7. More Squirrels and birds to consume lunch leftovers.
8. A rubberized Sign Paint that will bound the bullet back at the shooter.
9. Hunters that won't shoot until they see her horns.
10. Anglers who never clean their fish in lakes or streams.- District 6

"THE LADDER OF SUCCESS"

100%--I will
90%--I can
80%--I think I can
70%--I might
60%--I think I might
50%--It's impossible
40%--I'll think it over
30%--I wish I could
20%--I don't know how
10%--I can't
0%--I won't

--N. Y. Evening Post

THE "SAUSAGE TREE."

The "sausage tree" which bears fruit that resembles sausages grows in East Africa. The fruit has an inviting look, but is not edible, having a hard pulp. The natives consider the tree sacred. Poles made from the "sausage tree" are erected before the houses of the chiefs and worshiped by the tribesmen. The natives also roast the "sausages" and place them against parts of the body afflicted with rheumatism.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

Vol. XIV No. 20 Washington, D. C. May 19, 1930

SALES AND PROTECTION

By S. A. Moore, Crater

During the summer of 1929 I scaled on the Owen-Oregon Lumber Company sale on the Crater Forest the equivalent of 74,984-16 foot logs which if placed end to end would reach 243.6 miles, or from Medford almost to Salem. In log scale this is 21,267,590 ft. B.M. of pine and fir timber, with a stumpage value of approximately $64,653.47. Of this amount the County receives 25 per cent or $16,163.37. This 21,267,590 ft. B.M. would make a board walk 1" thick and 16" wide across the continent from San Francisco to New York, or would build 425 average sized bungalows. This was cut from 925 acres of forest land after leaving from 18 to 20 per cent of the thrifty young trees of merchantable size for future growth and watershed protection.

The Owen-Oregon Lumber Company employed some 100 men for about seven months to cut, log, and place these logs on the cars, paying them approximately $100,000 for their labor. The Government gets about $69.90 per acre for its investment in protecting and growing the trees. The County gets $17.47 in lieu of taxes. The laborer receives approximately $108.11 per acre for his work.

A young forest is left on the ground that will furnish another crop in from 30 to 60 years.

Adjacent to the sale area is the Cat Hill burn covering 28,000 acres. This area has been made a waste by repeated fires. The fire of 1910 destroyed about 200 million feet of merchantable timber, representing a loss in stumpage of $608,000 to the Government and County and $858,000 in labor to the logger. This loss was caused by a box of matches in the hands of an incendiary. A box of matches which can be made out of a small chip of a tree, in careless, ignorant or malicious hands can impoverish a region, lay bare a watershed, deprive the owner of revenue, the County of taxes, and the people of the community of a livelihood.

You and I may not start a forest fire, but somebody does for there were 83 fires on the Crater Forest in 1929, of which 68 were man-caused. You and I also live and work here and we are interested in seeing that we and our neighbors and our visitors are cautioned and taught to prevent forest fires by learning to be careful with matches, smokes and camp fires when in the woods.

HORSE POWER VS. MAN POWER

By W. J. Brokenshire, Lassen

At the Ranger School in 1927 three crews constructed a fire line in the same type of country and the cost carefully computed showed:

Horse and plow	4 men	- $ 3.40 per mile
McLeods and rakes	11 "	10.00 " "
Shovels	11 "	13.00 " "

In October, the Davis Mountain fire was reported. The State ranger was on another fire and could not be reached, so the State Fire Dispatcher reported the fire to us. It was close to the Protective Area, elevation 3,200 in fairly open Y.P. and D.F. type; ground cover needles, squaw carpet, some reproduction and brush, - very good country for the use of the horse and Shultz trail grader.

The fire ha covered approximately 800 acres upon our arrival,- i.e., four men, tools horse, Shultz trail grader and kerosene Hauck torch. Approximately four miles of line was constructed with the grader and two men, averaging about one mile of line per hour, two trips being made over the line. A part of the line had to be fired as soon as constructed as the fire was close and fanned by a brisk wind. However most of the firing was done at night with the Hauck torch and four men, one man backfiring, another cleaning out the trail in places which the plow had missed, and two men patrolling the line, one on horseback and the other afoot. The fire burned approximately 1,000 acres.

Cost of Construction, 4 miles of line -
Horse hire - no charge - used fireman's pack horse
If horse had been hired ....$ .75
Labor 4.80
Total Cost.............$ 5.55 or $1.39 per Mi.

The cost of constructing line with shovels, rakes and McLeods in similar country, as computed at Ranger School, was $11.50 per mile, showing a saving in the above fire of approximately $10 per mile. There was also a saving in supplies and transportation costs, not to mention a speedier control of the fire. By the use of the Hauck torch the line was backfired with less men and at a time when conditions were good.

The above conditions happened to be ideal for the use of the trail grader but I believe that on all of our large fires a part of the line could be constructed in this manner if the horse and grader were available.- From D. 5 Bulletin.

WHO IS OUR "OLD TIMER?"

A press release from District 3 contains the following:

"The oldest old-time forester still in active service is Thomas H. Sherrard, who entered the Bureau of Forestry on July 5, 1899. Sherrard started work at the Washington headquarters of the Bureau of Forestry and went into the field in 1900. In 1907 he was appointed Supervisor of the Pikes Peak National Forest in Colorado and in the following year was transferred to the Cascade National Forest in Oregon. At the present time he is Supervisor of the Mt. Hood National Forest in Oregon.

"The second oldest forester in point of service is L. F. Kneipp now Assistant Forester in charge of the Branch of Lands. Kneipp started out on May 9, 1900, as a Ranger on the Prescott 'Forest Reserve' in Arizona. He was made Supervisor of the Pecos and Jemez Reserves in 1906. Appointed a Grazing Inspector in the Branch of Grazing in 1907, he was made Assistant Forester in that Branch in 1910. He became District Forester in charge of the Intermountain District in 1915 and in 1920 came to Washington as Assistant Forester in charge of Lands."

It will be noted from the following letters that Supervisor Kreutzer outranks both Sherrard and Kneipp in point of service."

"Department of The Interior
Office of Supt. of Forests

Denver, Colo., Aug. 8th, 1898.

"To Whom it May Concern,

"This is to certify that Wm. R. Kreutzer is appointed Forest Ranger in the State of Colorado to protect the public forests from fires or any other means of injury to the timber growing in said reserves.

W. T. S. May
Supt. of Forests
(Colorado & Utah)"

It will be noted that this appointment covered a large scope of country and is interesting because of the intent and purpose for which it was made by the Superintendent of Forests. This was followed by the more formal Department appointment which reads as follows:

"Department of the Interior

Washington, August 30, 1898.

"William R. Kreutzer of Colorado is hereby appointed a Forest Ranger of the General Land Office, at a salary of Fifty Dollars per month to take effect when he shall file the oath of office and enter on duty. Provided that said appointee shall keep a horse constantly on the reserve for use in case of necessity.

Thos. Ryan
Acting Secretary."

This appointment was accompanied by a letter which mentions "instructions". Here it is:

"Department of the Interior
General Land Office
Washington, D. C.

(A)
M.G.O.

August 31, 1898.

"Mr. Wm. R. Kreutzer,
Care W.T.S. May
Forest Superintendent.

"Sir:

"I transmit herewith the official notice of your appointment by the Hon. Acting Secretary of the Interior dated the 30th instant, as a Forest Ranger of this office, at a salary of $50 per month, to take effect when you shall file the oath of office and enter upon duty. This appointment is with the provision that you shall keep a horse constantly on the reserve for use in case of necessity.

"Your oath of office has been received and duly noted. Instructions as to your duties will follow. Please acknowledge receipt hereof.

Very respectfully,
F. W. Mondell
Acting Commissioner."

Clipped from D. 2 Bulletin

TAXATION

By A School Director Ranger, D. 6.

Why do we hear so much grumbling in rural communities about the Government taking over the cut-over land through land exchanges? Haven't we shown conclusively that there is practically no loss in taxation through the 25 per cent return to the States and the amounts that the Forest Service is spending in the States in improvements? Yeh, we have explained that all right - but here is what we haven't explained.

The largest tax that most rural communities pay is school taxes, and especially if that community is just large enough to try to support a high school and grade school. In the case I have in mind, approximately one-half of the district is National Forest land. Ninety per cent of the remainder did support a fine stand of yellow pine timber but this has been logged, reducing the tax value of the land from about $10 per acre to $2.50. The other ten per cent of the land was farming land, valued at about $50 per acre. A dredge comes along and digs up one-third of the farming land, reducing the dug-up portion to $2.50 per acre. At the present time, the logged-off land is still paying about one-third of the school taxes. Now the Government is going to come in and make exchanges for the logged-off land. Taxes are now sky-high, and there is still a population large enough to demand that a high school and common school be maintained. Not a very bright prospect for the land-owner that cannot let go, and is holding an almost empty sack.

Now, what about the 25 per cent of National Forest receipts covering a part of this loss in taxable land? That would be fine if the melon were cut that way - but it is not. The State returns the County its portion, which the County puts into the general fund to be proportioned out over the whole County, regardless of whether the school district contains any forest land or not. "Too much trouble", they say - and probably not over one school district in the County so situated knows that it is entitled to anything. It would surely make a difference in the feeling of some of the rural communities if they got their fair share of these receipts - and mean the difference between being able to maintain a standard school or closing out altogether.

A BIT OF HISTORY

May 6, 1908, is the date upon which Gifford Pinchot, then Forester, recognized the inauguration of a system of forest experiment stations in the Forest Service. Because of its historical importance, excerpts from the memorandum establishing these research units have been taken. It is highly significant to note that there have been few changes necessary in the past 20 years. The memorandum was prepared by Raphael Zon:

"It is manifestly the duty of the Federal Forest Service to take the lead in the research work of forestry as it has taken it in the administration of the forests. This has already been recognized to some extent by the organization of scientific offices in the Service. With the general tendency of the present policy to distribute the work of the Service among field offices, and to retain the control and supervision in the Washington office, there can be found nothing inconsistent in the step toward the establishment of forest experiment stations

"The new system provides for the permanent assignment to a given region of specially trained men, who will have opportunity to become thoroughly familiar with their region and whose work will thus be conducted with the greatest effectiveness and least expense. Forest experiment stations in the eastern portion of the country, of equal importance and with the same general objects, involve some rather different propositions in the matter of organization and their detailed consideration will therefore be left until a later time.

"It is thought advisable that there be established in each of the silvicultural regions of the West, a Forest Experiment Station. The distribution of these will perhaps conform to the Inspection Districts, though this is an unessential matter. The purpose of these stations is to carry on, on areas segregated from the usual business enterprises, experiments and studies leading to a full and exact knowledge of American silviculture, to the most economic utilization of the products of the forest, and to a fuller appreciation of the direct benefits of the forest. Each station is allowed an area sufficient for the proper handling of short-period experiments, for experiments requiring a number of years, and for the maintenance of model forests typical of the silvicultural region. These areas furnish the most valuable, instructive and convincing object lessons for the public in general, for professional foresters, lumbermen, and owners of forest land, and especially for the technical and administrative officers of the National Forests. They should be made the meeting grounds for supervisors, rangers and guards, where demonstration may be given for the education of these men, and an active interest stimulated in the technical side of the forest work — an interest which could not be engendered by any amount of literary or oratorial effort.

"There should be one forest experiment station in each of the silvicultural regions of the West (and at a later date, if conditions permit, one each in the white pine region, the Appalachian hardwood region, and the Southern pine belt). It is highly desirable that a single forest representing all of the conditions typical of the region, be selected, and a portion of its area set aside for the purposes of the experiment stations. Where it is necessary to locate some of the areas remote from the main body, the work done on them will necessarily be less intensive, and the results therefore less valuable." - E. N. M.

NATIONAL COMMITTEE ON WOOD UTILIZATION HOLDS ANNUAL MEETING

Wood utilization in all of its phases, and the various projects now under way or to be undertaken by the National Committee on Wood Utilization of the Department of Commerce, were discussed at the Committee's annual meeting held in Washington on May 2. R. Y. Stuart, who is vice president of the Committee, presided. The meeting was opened with an address by Secretary of Commerce, R. P. Lamont. In addressing the meeting Secretary Lamont laid special stress on the fact that the members of the Committee do not represent manufacturers of one commodity but rather of many seemingly unrelated activities, from lumber and logging to architecture and engineering and from pulp and paper manufacture to the manufacturing and distributing of furniture.

"The common interest which binds these groups together," the Secretary said, "is the conservation and proper utilization of our forest resources. The word 'conservation' as applied to timber has a somewhat different meaning than it has when used in connection with our other national resources. Unlike coal and minerals, timber is replaceable and can be grown at will Conservation of timber resources, therefore, does not mean the hoarding of timber or its non-use but rather the intelligent utilization and efficient forest management which will create conditions favorable to the growing of new crops. In connection with the Committee's work, it has frequently been pointed out that it is the intelligent use of timber which determines its value, and that the growing of crops by commercial interests must pay its way in order to be successful. For this reason, the timber owners of the country are keenly interested in having tree products put to their most efficient use. The National Committee on Wood Utilization has accomplished a great deal in furthering efficient wood using practices and in securing a more complete utilization of the tree."

Other speakers were: W. B. Greeley, Secretary-Manager of the West Coast Lumbermen's Association; N. Max Dunning of the American Institute of Architects of Chicago; A. W. Armstrong, President and Manager, Ayer and Lord Tie Co., Inc., Chicago; A. B. Campbell of the National Electric Light Association; and A. R. Joyce, Vice President, Joyce-Watkins Co., Chicago.

Major Stuart told the conference that "Through its activity within the field of wood utilization, the National Committee on Wood Utilization is rendering a large service to forestry by encouraging the profitable use of forest crops and giving an incentive to commercial forest production. While its work centers in the wise and effective utilization of wood products, the Committee's influence for good radiates to the forest resources themselves, since forest conservation is complementary to wood conservation. This mutuality of interest between wood utilization and forest utilization deserves emphasis, and greater cooperative effort. Being active in both fields, the Forest Service values its cooperation with the Committee for its promise of a wider appreciation of the relation of utilization to forestry."

YE EDITOR DISCOVERS

From all reports the Washington visitors to the Research Conference at the Forest Products Laboratory, April 28 to May 3, were royally entertained. One of the high lights was a banquet given by the Forest Products Club on May 1. Not only from the gastronomic point of view but also from the point of view of entertainment for the eye, ear, and sense of humor, the affair was a huge success. S. W. Trayer acted as toastmaster.

R. P. A. Johnson depicted by means of lantern slides and charts what he understood the New Forest Products Laboratory would be like. Some of the features are: A main entrance and lobby which will be, to say the least, impressive. His demonstration, with a floor plan, of the operation of the Director's office was remarkably clear and impressive. Those who have heard Johnson in action will have no difficulty in understanding the faultless manner in which the explanation was delivered.

Kotok gave a talk on the results of an original research project he and Sparhawk had carried on during the conference on the amount of time consumed by the speakers in using such expressions as "I think," "It seems to me," "I don't think," and "It would appear," etc. In other words "The Thinkers" vs "The Seemers." The conclusions, as set forth, showed beyond any possible question that a great contribution to knowledge had been made.

The sudden appearance of a local policeman led those present to fear that the joyful occasion would be seriously marred. This policeman, it was soon found out, had a warrant for the arrest of Clapp. Fortunately it was soon apparent that the charges had been trumped up and were grossly false - or, at least, only partly true. The assumption is that the case was settled out of court without undue difficulty, thanks to the efforts of Trayer and Hawley, who went into a huddle when the warrant was presented.

There was also a very remarkable demonstration of television which showed clearly the great strides lately made and the perfect state of development that has been achieved in this branch of scientific effort.

Other incidents brightened the evening and showed clearly that the Club had taken considerable pains to make the evening a success, which it truly was.

- - - - - - - - -

Action on the reports of Committees of the District Foresters Meeting required more time than expected, but the documents are now in the hands of Haynie for printing and should reach the District Foresters by the time this bulletin is read.

- - - - - - - - -

The public welfare medal, "for the most meritorious work in the application of science to the public welfare," has been awarded posthumously to Stephen T. Mather, of Chicago, for his service with the National Park Service.

Keplinger's leadership in the field of training long ago reached beyond the boundaries of District 2. During the District Foresters Meeting it was decided wise to attach him formally to the Washington office. On June 1 Keplinger will begin his work as consulting specialist in training to the Service as a whole.

- - - - - - - - -

One overcoat, dark gray, herring bone weave, made by New Process Company, Warren, Pa., apparently abandoned by field man attending District Foresters Meeting, is now in the custody of the Branch of Operation. Owner may obtain it by paying postage and cost of this ad (which through the extreme generosity of the Editor will be nil.)

DOMESTIC SCIENCE IN D-5

We have no idea of the use made by the Bureau of Public Roads of a Singer sewing machine, but recently they declared one as surplus, a fact made known in the customary way and broadcast to all the Districts with Henry Wold's customary efficiency. Other Districts one might expect to have an interest in so useful a mechanism showed an indifference amounting to contempt. But D-5 was a prompt applicant, and has been awarded this useful, often indispensable, piece of household equipment. Does this mean that visitors to D-5 are now to enjoy the pleasure of watching Bouvier Show thread a needle with all the scientific technique which characterizes his every action, or of both seeing and hearing Lou Barrett run up a rip in his field pants, or is D-5 planning to buy a supply of penitentiary canvas and have the stenographers spend their spare time in the manufacture of tents and pack covers? - L. F. K.

BEAVER AND WATER

By C. H. Thorp, Wallowa

Bear Creek is a stream of about 20 miles in length, rising on the Wallowa Forest, and emptying into Wallowa River near the town of Wallowa. That is, it empties into the river part of the time. During August and early September, it doesn't supply enough water for irrigation. Besides furnishing the water for the town of Wallowa, it also irrigates some 2,000 acres. Many ways of increasing the water supply have been discussed, but as Mark Twain, I believe, said about the weather, nothing has been done about it. There do not seem to be any mountain lakes of sufficient capacity to try to make a storage reservoir, and the canyon is mostly too narrow and steep to justify an expensive dam. It has also been suggested that water can be brought around the hill from Wallowa River for irrigation. One of the latest proposals is to establish colonies of beaver in the most favored localities along the creek. It is said by some of the older residents that the water formerly held up better than it does now, and that there were numerous beaver colonies along the creek; that after they were trapped out, the water supply failed earlier. If there is any chance of success, that would be an interesting experiment.

SHOWS TIMBER GROWING IS PROFITABLE

"The Gloister Lumber Company's representative in Amite County Mississippi, stated to Forester Merrill that the biggest tree the company had ever cut produced 9,005 board feet of lumber from four 16- and two 14-foot logs. It was necessary to split this tree with dynamite before it could be run through the mill. The same company reported the largest acre it had ever cut as yielding 104,000 board feet of lumber. A section of log displayed by the company showed a diameter growth of 29 inches in 34 years.

A realization of the rapid growth of trees in the section and the profits to be obtained from growing timber are causing most people in southwest Mississippi to do their utmost to prevent the forest fires which kill the young growth and cut in half the rate of growth of larger trres, said the State Forester.- From the American Lumberman.

PAUL BUNYAN STAFF

The Editor of the American Agriculturist says "A few weeks ago, I printed a distress call in this corner from a farmer who had a cornstalk that grew so fast he was unable to cut it down because he could not strike twice in the same place. Following this, there came a letter which reads as follows:

"Dear Ed: I would like very much to grind my axe and help a brother farmer cut his big cornstalk. However, it is impossible for me to do so on account of being so busy trying to harvest my pumpkins.

"You see, we used some of that new fang-dangled concentrated fertilizer which your paper recommended on my pumpkins patch and I have been unable to lasso my pumpkins because the vines grew so fast that they dragged the pumpkins all over the ground and absolutely wore them out!"

A WORD ON ADVERTISING

"As the country has grown, the size of our industries has grown also. Yet plant and equipment and working capital, though always important, are no longer accepted as the complete index to the worth of a business.

"Today there is increasing appreciation of two other factors that contribute to present and potential earning power . . . capable, full-visioned management and public good-will.

"These priceless assets seldom appear on the balance sheet, yet they are always in the minds of those who finance a business and are of utmost importance to those who purchase the securities thus offered. Frequently, the good-will of a business, measured by the regard in which it is held by millions of people, has a value as great, or greater than its actual physical assets.

"In the building of good-will, and in its preservation, there is no force more powerful than the force of good advertising.

"Truthfully and sincerely conceived, unmarred by exaggerated statement or unfounded claim, it implants desire and preference in the minds of millions of people, penetrates new markets, builds up a bulwark of confidence and belief that helps to resist seasonal trends and depressions, unfair competition, and the temporary appeal of inferior products sold on price alone." - Clipped

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

MAY 1930

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

VOL. XIV, No. 21 WASHINGTON, D. C. MAY 26, 1930.

MEMORIAL DAY OBSERVANCE

By R. V. Reynolds, Washington

The Forester has appointed Herbert A. Smith a member of the Memorial Tablet Committee. Those who heard Mr. Smith's address at the unveiling of the Tablet in 1921 will agree that this appointment is most appropriate. It fills a membership which has been vacant since Paul D. Kelleter left the Forest Service. The Committee now includes R. V. Reynolds, H. A. Smith, and J. M. Witherow.

In observance of Memorial Day flowers and a wreath will be placed before the Tablet as usual on May 29, and on the following day the wreath will be taken to Arlington Cemetery and placed on the grave of Stanley Augspurger, who is the only one of the Forest Service dead who was buried in Washington. This simple observance has never been formalized to the extent of a ceremony, and there is no intention of doing so. All members of the Forest Service, however, are invited to visit Arlington when the wreath is placed on the grave.

The Forester desires that the custom of decorating the Tablet and the grave shall be perpetuated. This year he is sending to each of the nearest kin of the men whose names are on the Tablet a letter, which reads as follows:

"As Memorial Day draws near our minds turn to the Forest Service boys who joined the colors in the World War. Especially we think of those nineteen whose names are inscribed on the marble Memorial Tablet, unveiled in 1921, which is hung where it may best be seen by everyone who enters the Forester's office.

"Each year since the unveiling of the Tablet we have done honor in simple fashion to the memory of these boys. The Tablet is draped with flags, and a wreath is placed before it for a day in order that all who pass may note that we have not forgotten our soldiers. One of them -- Stanley Augspurger of Ohio -- was buried here in beautiful Arlington National Cemetery. His grave symbolizes to us the graves of all the other Forest Service boys who were his comrades, and who now lie beyond our physical reach. Holding that thought, each Memorial Day we place on his grave the wreath from the Tablet.

"I have thought that perhaps you would like to know these things -- to know that we have not forgotten, and that when we decorate the grave of Stanley Augspurger on Memorial Day we intend that act to honor also the memory of ______________________________.

"Very sincerely yours,
(signed) R. Y. STUART
Forester."

The Memorial Tablet Committee is preparing to make recommendations which will result in determining an appropriate location for our Tablet in the new building of the Department of Agriculture.

It is understood that the large Memorial Tablet of the Department, for which about $10,000 has been collected, will be unveiled during the present summer.

PLANT INDICATORS AND TAXATION

By E. N. Munns, Washington

There has been much discussion in some quarters about the use of certain trees (and of other plants as well), as indicators of the quality of the land. To many of those discussing the subject, it appears as something new, yet the old settlers used the forest vegetation as a means of determining the agricultural value of the land. We find however, our old botanist friend, F. A. Michaux writing 125 years ago upon this "new" subject with particular reference to our hinterland, the country west of the Alleghenies. He said:

"In Kentucky, as well as in Pennsylvania, Virginia, and the Carolinas, the land is divided into three classes for the more equal assessment of the land tax. This division, which is according to the fertility of the land, has a different relation in each State; thus in Kentucky, for example, they put the same sort of land into the second class, which, east of the mountains, would belong to the first; and in the third, they rank such as, in Georgia and Lower Carolina, would be put into the second. I do not, however, mean to be understood by this, that there are no lands in the eastern States as fertile as those of the West; but they are not common, and are seldom met with but by the sides of the rivers and in the vallies, and do not include such a considerable extent of country as in Kentucky and that part of Tennessee to the westward of the Cumberland Mountains.

"In these two States they appreciate the degree of fertility of the land by the different species of trees which grow upon them; thus when the sale of land is advertised, they are careful to specify that such or such kind of trees grow on such or such parts, which is sufficient information to the purchaser. This rule, however, admits of an exception, with respect to the *Barrens*, the soil of which, as I have mentioned, is very fertile, and on which, nevertheless there are found the *Scroby oak*, *Quercus nigra*, and the *Juglans hickery*, which, in the forests, are evidences of the worst soil. Supported by this mode of estimating the fecundity of the soil by the nature of the trees which it produces, I shall mention a very remarkable observation, which I made as soon as I arrived in this State. In Kentucky and Cumberland (that part of Tennessee which lies west of the mountains of that name) independently of a few trees, which are peculiar to these countries, the mass of the forests, in lands of the first class, is composed of those species which are rarely met with, to the east of the mountains, in the most fertile soils; these species are principally the following, *Cerasus virginiana*, cherry tree; *Juglans oblonga*, white walnut; Pavia lutea, buckeye; *Fraxinus alba*, *nigra cerula*, white, black and blue ash; Coltis follus villosis, ackberry; *Ulmus viscosa*, slippery elm; *Quercus imbricaria*, black-jack oak; *Guilandina divica*, coffee-tree; *Gleditsia triancanthos*, honey-locust; and *Annona triloba*, papaw, which rises to a height of thirty feet. These three last species denote the richest lands. In cool mountainous places, and by the sides of the rivers which have not steep banks, there are also found the *Quercus Macrocarpa*, over cup white oak, the acorns of which are as large as a hen's egg; the *Acer saccharinum*, sugar maple; the *Fagus sylvatica*, beech, and also the *Platanus Occidentalis*, plane; the *Liriodendrum tulipifera*, white and yellow tulip-tree; and the *Magnolia acuminata* cucumber-tree, the three last of which attain a circumference of eighteen or twenty feet.

The plane grows to a larger size. The two species of tulip-tree, with white and yellow wood, have no external character, either in the leaves, or in the flowers, by which they can be distinguished from each other, and as the yellow wood is most used, before a tree is felled, a piece is cut out, to ascertain whether it is of this species.

"In the lands of the second class, are found Fagus castanea, chestnut; Quercus rubra, red oak; Quercus tinctoria, quercitron; Laurus sassafras, sassafras; Diospiros virginiana, persimmon; Liquidambar stryaciflua, sweet gum; Nyssa villosa, gum-tree. a tree which yields neither gum, nor resin, as its name seems to imply.

"Those of the third class, which are generally arid and mountainous, scarcely produce any but the black and red oak; the Quercus prinus montana, rocky oak, some pines, and sometimes Virginia cedars."

FOREST RECREATION KEEPS MINING COMPANY'S EMPLOYEES HEALTHY AND CONTENTED

By John B. Taylor, Deerlodge

The Deerlodge Forest is worth a quarter of a million dollars a year to one mining company, - at least that is what one of the company's officials recently said to me. Moreover he didn't credit this value to timber, grazing, waterpower, or any of the other usual resources, but to that intangible resource, recreation. He referred to the effect of outdoor recreation on the health and contentment of the Anaconda Copper Mining Company's employees in Butte and Anaconda.

He cited a situation which arose last summer. A drop in the price of copper necessitated a wage reduction. As usual there were agitators ready to fight the decrease but, as the official stated it, the soapbox orators couldn't get audiences; when the men weren't at work they were out picnicking or fishing. The seeds of radicalism find poor soil amongst healthy and contented people. And Forest Recreation certainly contributes to health and contentment.

$250,000 a year sounds like lots of money. But after all it is less than one per cent of the Company's annual payroll here, and perhaps it isn't unreasonable to think that a plentiful, available supply of wholesome recreation does add that much to the health and contentment, and consequently to the efficient productivity of these workers.

But it makes me wonder. We are spending on the Deerlodge Forest not to exceed $700 a year on recreation improvements and the administration of recreation. We spent over $8,000 on sales and nearly $15,000 on grazing. Looks like we are failing to feed the cow that gives the milk.

TREE MEASUREMENT SALES ON THE SITGREAVES

Extracts from a Memorandum by R. C. Salton

The first timber sale made under the tree measurement method on the Sitgreaves was the Lakeside Sawmill Company's sale of 10-6-25. This sale was made to cover 231 M ft. B.M. of western yellow pine. The timber was carefully measured, calipers being used to determine diameter, and Biltmore sticks to determine the height of the tree to the nearest number of 16' logs of 8" top diameter. Each tree was recorded in 1" diameter classes and number of 16' logs. The gross volume was then determined from the Region 3 volume tables for western yellow pine and black jack - Forms 874-tt and 874-uu.

In order to get a check on tree measurement volume and defect in the timber, the whole amount of the sale was scaled after the logs were cut and skidded. The administrative costs on this sale ran rather high on account of both measuring and scaling of the timber.

The results obtained from the work on this first sale showed the possibility of handling small saw timber sales under the tree measurement methods.

During the past two years all sales to two operators on the Lakeside Ranger district have been made under the tree measurement methods. All trees are carefully measured, numbered, and recorded in accordance with the Region instructions. The timber stands on this part of the Forest are pure western yellow pine, making conditions especially adaptable to the tree measurement methods.

In order to check tree measurement volumes and defect contained in the timber, a number of trees, 25 to 50 trees out of every 150 to 300 trees marked, are scaled after they are felled and cut into logs. The amount of payments on these sales has required the marking of from 150 to 300 trees at each marking.

The cost of administration of tree measurement sales on the Sitgreaves during 1927-28-29 was 21.7¢ per thousand for a cut of 2,502 M ft. B.M. The cost of regular sales during 1924-25-26 was 28¢ for a cut of 816 M ft. B.M. The sales on which timber was both measured and scaled when the tree measurement method was first being tried are not included in these costs.

The cost per M shows as follows:

	Marking Boundary	Marking Timber	Scaling	Brush Disposal	Supervision	Total Cost Per M
Tree Meas. Sales	.005	°.12	-	.04	.05	.215
Regular Sales	.005	.05	.12	.06	.05	.285

°This includes the marking and measuring of the timber.

It appears that there is a saving of 7¢ per M in marking, measuring, and check scaling for volume in defect over the regular sales methods. The greater part of this saving is due to the fact that the Ranger or man administrating these sales does not have to make special trips to do the scaling. Under the tree measurement method, he makes one trip for check scaling against 3 or 4 trips if he had to scale the total amount of the sale. In other words the saving comes from saving in travel and time of scaling. If the tree measurements, marking, and check scaling for defect and volume are all carefully made, there is very little difference in actual effective time taken between the tree measurement method and the regular sales method of marking and scaling.

It is necessary for the man administrating the sale to give special attention to brush disposal and supervision of the sale, as it is very easy to slight these for some other more pressing work on the district. This is especially so if the sale area happens to be off the general traveled routes. It is not necessary to make special trips for inspection of brush disposal and supervision of the sale. This work can be done during the visit when the timber is being marked and measured, or at the time when check scaling is done. Of course it is necessary to make a special trip to burn brush when weather conditions are favorable.

It is believed, in view of the experience gained from what work we have done on tree measurement sales that if careful work is done in measuring of the timber and check scaling and a good volume table is used for the species of timber and locality in which it is being cut, it is practical and better to handle timber sales under tree measurement methods.

CARY IS OPTIMISTIC

The following sentences are taken from a letter written by Austin Cary to the President of the Society of American Foresters, copy of which letter Mr. Cary sent to me. It may be interesting to Bulletin readers because of its optimism and because it comes from one of the oldest members of the profession both in years and point of service. I do not either vouch for it or criticise it, but quote it for what it is worth:

"Years ago E. T. Allen drew a distinction between forestry in the woods and forestry in politics. The first kind is what I have concerned myself with, as you know. Associations with actual woods managers, with business men, with people representative of our plain citizenship, are a part of it. Next I want to indicate the frame of mind which this service and these contacts have cultivated in me. It is a thoroughly cheerful one. On this, perhaps, I should not elaborate, but I will say that in a general way the following seems to me the true state of the case - the people of this country now have in their minds the idea of the importance to them of adequate timber supplies and the maintenance of certain forest areas. This idea they are acting on, or at least getting ready to do so; in large measure they see it as opportunity rather than obligation. Given normal reminders and stimulus, also guidance that may be needed on technical points, and I believe myself that they will carry the thing through in ways effective, economic, suited to them."

The following paragraph is taken from the same letter. We see every day many happenings to demonstrate its truth, but it cannot be repeated too often:

"Men usually agree pretty well in their judgment of specific matters and those with which they have had experience. On the other hand, the same men put up against supposititious propositions, matters with which they have had no experience, the imagination free, will be likely, particularly if no responsibility attaches to their decisions, to render judgments very wide apart." -- F. M.

OLD DAN PICKS THEM UP AND LAYS THEM DOWN

By A. W. Armstrong, Mount Hood

Henry Ford recently made the statement that if he had his way he would employ only men who were between the ages of 40 and 60 years. Henry is right every once in a while and the case of "Old Dan" as related here certainly bears him out.

During the lightning storm of July 31, a trail crew of seven men was moved a distance of 24 miles. They traveled at night and on foot from a river elevation to Mt. Lowe with the standard fire equipment, and to be sure that they had plenty of grub, Jack Fields, foreman, took on a leg of pork roast. Jack is husky and his crew were all young men with the exception of "Old Dan." Some of them had distinguished themselves in athletic sports. All arrived at Mt. Lowe with Dan in the lead. The Ranger used up his first-aid kit doctoring blistered feet and sore tendons and sized them up. Two of the youngsters were unable to go farther and were laid up for rest. Dan insisted he was feeling fine, and ignoring the Ranger's horse, which was offered him, he led the crew to the fire. He was on fires for ten days and was just as tough and able at the last as when he arrived. Dan would have been insulted had he been left off any of the fires. When this crew was brought to Oak Grove R. S. for the La Dee fire Dan was in the lead when they arrived at the station after another 23-mile hike and he hit the fire in steep, rough country with a smile and stayed until it was under control and then finished the job as the last man to be laid off the patrol. I am wondering how old and also how young we should hire them for trail crews when they are apt to be used as our first line of defense. Dan is only 65 this spring and is coming back next year.

YE EDITOR DISCOVERS

The meeting of the National Foret Rservation Commission was held in the Forester's office Saturday, May 17, at which time the commission was asked to consider the largest program ever presented to it at a single meeting. It involved a total of 539 cases, aggregating 422,737 acres of land and a total expenditure of $1,202,172, or an average cost of $2.84 per acre, which is by far the lowest average price per acre of any program thus far presented. There were several striking features about the program. One was the large number of offerings of what appear to be abandoned farms. Another was the excellent forest quality of much of the offered land. A third was the substantial margin between the appraised values and the prices at which the lands were offered. A fourth was the large number of offers within areas where for a number of years the purchase work has been relatively stagnant. The whole program reflected strikingly the change in land economic conditions now taking place within the United States.

The commission also approved the establishment of four new purchase areas - one, the Cumberland area in Kentucky; another, the Kiamachi area in Oklahoma; third, the Homochitto area in southwest Mississippi; and fourth, the Evangeline area in southern Louisiana. An abnormally large list of routine modifications of previous authorizations also required consideration, as well as a couple of somewhat unusual land exchanges.

- - - - - - -

Region 1 is preparing to initiate experiments in the use of twelve passenger planes for transportation of fire fighters when needed into roadless portions of the Region 1 wilderness areas. The initial step will be the clearing and smoothing of a few such landing fields. If sufficient landing fields were possible in these big interior regions, the use of the planes might be cheaper than the construction of roads. One difficulty is to find large enough plots of reasonably level ground in a country which normally stands on edge. Even a more serious difficulty may be the tricky nature of air currents in meadows and on ridges where landing fields would be topographically possible.

- - - - - - -

By a Royal Norwegian Decree of March 21, 1930, the import into Norway of elms - therein included all species belonging to the Ulmus group - for reasons of protection of plant health or life, is prohibited.

- - - - - - -

The article "Flying Foresters" in American Forests and Forest Life for April has evoked at least two strong letters of protest from Regional men.

- - - - - - -

The children of the sixth grades of the Washington Public Schools observed Forest Week May 5 to 9. Eleven forestry meetings were held, the Service furnishing a speaker for each meeting. A Forest Service film, either "Trees of Righteousness" or "Friends of Man," was shown at each meeting. The speakers were Messrs. C. E. Rachford, H. N. Wheeler, W. R. Mattoon, W. K. Williams, of the Forest Service and G. H. Collingwood of the American Forestry Association. A forestry message signed by the Secretary of Agriculture was sent to each school prior to the meetings.

- - - - - - -

Supervisor Duthie of the Black Hills arrived in Washington on May 16 for a detail to the Office of Public Relations.

MR. DAGUE LOSES A DIME

By Foster Steele, Cascade

Last fall, when it should have been raining but wasn't, and the Supervisor in a reminiscent mood was humming "Once in the dear, dead days beyond recall, when on the world the mist began to fall," someone suggested forming a "rain pool," the idea being to deposit a dime in the pool and guess the hour and day when it would rain one-tenth inch or more at a given place on the Forest. Contributions and guesses were numerous and the pool grew and flourished. Came a telegram from the Weather Bureau, "Unsettled Friday, probably rain Saturday," signed Dague. The "guess" was immediately entered in the pool and Mr. Dague billed for the dime, which was paid by return mail. Interest grew and so did the pool until the cigar box containing the dimes was guarded day and night. Friday morning, a cloud appeared and the dead line fell. No more guesses were allowed. Everybody watched the tiny cloud, watched it disappear, watched the sun rise into a cloudless sky Saturday and realized that even the Weather Bureau is fallible and there are times when all signs fail. Lookouts unpacked their knitting needles and prepared to stay all winter. Firemen put on the last bean to cook and ordered more. District rangers patched their riding pants and extended their September work plan to include October. The most pessimistic guesser missed it so far he was almost (but not quite) ashamed to take the money!

FORESTRY

A forest survey is conducted by the Federal Service to determine just how many trees are planted annually, in the United States and how fast they grow. An accurate survey will involve a considerable slaughter, unfortunately, because no figures on this score can pretend to any scientific value until the vandals who tear down wild honeysuckle trees, and dogwood, and scarlet-seeded maple and the like on their Sunday motor tours, and come back to town with these beautiful branches draped about their radiators, are pretty thoroughly exterminated. We suggest a poison gas and machine gun auxiliary to the Forest Service in the interests of science - and other considerations. - Editorial from N. O. Item - Tribune

HOW TALL IS A TREE?

Cary Hill a few weeks ago had a statement showing that California held the world's record for trees. Now comes a pictorial publication from Australia entitled "The Majesty and Beauty of the Australian Gums" which contains the following paragraphs:

"The Australian Eucalypti, or Gum Trees, are native to no country in the world, other than Australia. In all there are approximately two hundred different varieties from the dainty Snow Gum to the giant Karri, Mountain Ash and similar species - these are amongst the tallest trees in the world, often towering into the sky to a height of over 400 feet.

"In 1896, Chief Surveyor F. S. Brockman discovered on the shores of Lake Alexander, Western Australia, a Giant Flowering Gum, measuring 537 feet in height. This is a world's record." - E. N. M.

KID BOXES

By L. J. Putsch, Prescott.

Recently a trip to the Carmichael & Haining sawmill on the Prescott National Forest disclosed a neat stock of material, seemingly 1" by 12" by 15". Upon inquiry as to the use of this material, because of its apparent unsuitability for ordinary boxes, it was learned that they were intended for "Kid Boxes," or little shelter houses for shade or protection from the rain, to and from which a kid toggled to a stake by one foot might go back and forth to the length of the strap or rope. The mother goats are driven out to feed during the day and returned to their "kids" in the afternoon.

Each box requires two pieces 1" by 12" by 14" for the sides, one piece 1" by 12" by 12" for the end, and one piece 1" by 14" by 15" for the top. There is no floor and one end, of necessity, is open. The boxes are delivered a distance of 48 miles at the price of 19½ cents each. While the actual price per thousand is not so great, it should be remembered that, because of the short lengths, many otherwise cull boards and pieces can be used.

DEMOCRACY AND NATURE

"Democracy most of all affiliates with the open air, is sunny and hard and sane only with Nature--just as much as art is. Something is required to temper both--to check them, restrain them from excess, morbidity. . American Democracy . . . must either be fibred, vitalized, by regular contact with outdoor light and air and growths, farm scenes, animals, fields, trees, birds, sun warmth and free skies, or it will certainly dwindle and pale. We cannot have grand races ... on any less terms. I conceive of no flourishing and heroic elements of Democracy in the United States ... without the Nature-element forming a main part--to be its health-element and beauty-element--to really underlie the whole politics, sanity, religion and art of the New World."- Walt Whitman

INCREASING THE LIFE OF TENTS

The Utah Outdoor Association has seventy-five 12' x 14' tents in use three to four months each year. When they had been in use five years the tents were treated by painting them with Preservo. They have been in use four years since this treatment and are still in good condition.

This Preservo saves the tent from mildewing and has proven a very good investment. One gallon of the solution covers a 12' x 14' tent and the material costs from $1.25 to $1.50 per gallon, depending upon the quantity ordered. It is made by Robinson Company, Port Huron, Mich., and can probably be secured from local dealers. - Region 4

ANOTHER JOB FOR RESEARCH

Referring to the piney woods a correspondent in DeBow's Review for 1856 says:

"Science has yet, determinately and satisfactorily, to elucidate the laws of that life preserving, subtle, and ozonotic principle which pervades these terebinthinate atmospheres. May this desideratum be speedily accomplished!" - L. Wyman, Southern For. Exp Station

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

VOL. XIV No. 22 WASHINGTON, D. C. JUNE 2, 1930

MILITARY PARTICIPATION OF THE FOREST SERVICE IN THE WORLD WAR

By Arthur C. Ringland, Adjutant, 10th Engineers (Forest)

When America associated itself with the Allies, the conflict with the Central Powers had reached the stage of a war of fixed positions; the western front had become stabilized from the Channel to the Alps. This situation developed an increasing demand and attrition of man power and material.

Of the many kinds of material needed to maintain the front and the lines of communication in the rear, timber was indispensable on account of its adaptability for the speedy construction of temporary engineering works. It was needed for long piling and planking for the docks, for ties for heavy and light railways, for bridges, for barracks in the training areas, for hospitals, for warehousing of supplies, for shell-proof dugouts, for duck-boards in the trenches, for fuel, and numerous other uses.

The demand for allied shipping to transport food and men, already cut to most dangerous limits through the success of German submarine warfare, precluded the allocation of bottoms for the transport of bulky timber supplies overseas. Local sources must supply the demand and happily the French forests, under prudent management since the days of Colbert in the 17th Century, were equal to the emergency. But France in 1917 was in no position to supply the skilled woodsmen and technical logging and milling equipment necessary to meet the expanded requirements of the British, the French, or the rapidly growing nucleus of the American expeditionary forces. So it was that one of the first necessities of the Allies upon America's entrance into the war was for technical troops and equipment to produce lumber and other wood products from the French forests. The personnel of the Forest Service through education, training, and experience was well fitted to render this unique assistance and was immediately drawn upon by the War Department.

The participation of the Forest Service began with the arrival in Washington in April, 1917, of the Balfour Mission and its request to the United States Government for a regiment of forestry troops. This resulted in the commissioning of Henry S. Graves, then Chief of the Forest Service, as a Major in the Crops of Engineers and his dispatch to France to make necessary preliminary arrangements for the active participation of the forestry troops.

It immediately became apparent that the French and British Governments could not meet even the initial lumber needs of the American forces planned for overseas service. It became necessary to obtain release from the promise to the British of the services of the first American forestry units. An American organization was necessary to meet the requirements of our expeditonary force of two million men.

When General Pershing was informed that the American army must provide for its own wood requirements and that adequate provisions must be made well in advance, he cabled the War Department to give priority to the transport of forestry units. The War Department charged the Forest Service with the organization and recruiting of the 10th Engineers (Forestry), and Colonel James Woodruff was detailed, from the Corps of Engineers of the United States Army, as the regimental commander. The man in the ranks were drawn from the lumber industry and from the Forest Service, and the officers largely from those who had received their training in Federal, State, or private forestry work. The assembly and training camp was Camp Leach, at American University, Washington, D. C. The regiment sailed for overseas on September 10, 1917, and the first timber was felled November 25, 1917, just six months after recruiting for the regiment began. In less than a week following three mills, two French and one American, were in operation.

Pending the arrival of the Tenth Engineers in France, a number of foresters were commissioned and sent to France to assist in acquiring forests and laying out logging operations. The procurement of forests was through a joint committee of French, British, Belgians and Americans, known as the "Comité Interalliés de Bois de Guerre." Subsequently, the purchase of manufactured lumber and other wood products to supplement the American operations were centralized, under the General Purchasing Agent, General Dawes, to prevent needless competition. Manufactured lumber was secured from Switzerland through treaty, ties from Portugal, some lumber through cessions by the French Government, and occasional small lots through purchase in France. Wood of all kinds was extremely scarce, high-priced, and in heavy demand for the French army.

To meet the growing demands of the Allies for wood, the organization of a second regiment of forest engineers was undertaken in August, 1917. The Twentieth Engineers (Forestry) was recruited under the command of Colonel W. A. Mitchell of the Corps of Engineers of the United States Army. Officers and men of this regiment were mostly obtained from the commercial field of forestry. The first battalion of the Twentieth Engineers reached France in November and the first mill began operation in January, 1918.

The production of lumber and other wood materials for the American Army by the Tenth and Twentieth Engineers was by individual companies scattered throughout France, the largest number being in the pine region south of Bordeaux. This and the fir region of the Vosges and Jura Mountains were the main sources of softwoods. Hardwood for ties came from central France.

In October of 1918, the American forestry forces were reorganized into one enormous regiment, designated as the Twentieth Engineers. It comprised 14 battalion headquarters, 49 forestry companies, and 28 forest engineer service companies. The roster at this time showed a total of 360 officers and 18,183 forestry troops with the A.E.F. in France. In addition there were 163 officers and 12,137 men in attached engineer service and quartermaster units under the supervision of the forestry section of the Division of Construction and Forestry, A.E.F. Under this plan of reorganization Colonel Woodruff became Deputy Chief Engineer of the Division of Construction and Forestry, and Lieut. Col. W. B. Greeley, subsequently Chief of the Forest Service, became director of the Forestry Section.

Shortly before the Armistice there were more than 80 mills in operation by American Forestry troops. The final report of the total cut of the Forestry Section, December 1, 1917, to April 1, 1919, or a period of 16 months, shows that 222,446,000 feet of lumber, 4,586,814 crossties, 39,095 pieces of piling, 1,271,161 steres of fuelwood, and 2,025,204 miscellaneous round products were made available to the Allied armies by the American forest engineers. The entire personnel and practically all of the milling and logging equipment for these operations had to be transported overseas, and maintained 3,000 miles from sources of supplies.

About 150 men of the Forest Service were in the ranks of the forestry regiments of the A.E.F., while 428 entered other branches of the military or naval service. Of these nineteen lost their lives, including ten killed in action.

TAKE THE PREMIUM OFF INCENDIARISM

By A. G. Jackson, Siskiyou.

For years we've been making it to the advantage of communities to have forest fires. There have been inadequate sums available for prevention measures, and local residents have had small cash returns from their part in fire prevention. On the other hand, when prevention has failed and fires have started up we've spent money freely to suppress them, greatly to the advantage of local tradesmen, transportation outfits, and laborers. Big fires have meant big payrolls. Thus we've actually put a premium on incendiarism, for if a man and a match are all that are needed to bring prosperity, men and matches are ready at hand. The system is fine for the community until some day the people awake to the fact that they have no more forests to burn and the place is left without its annual fire money; and its last state is worse than its first. It is time to tackle the forest protection problems at the other end, spend money for forest improvements and the necessary patrol and watchfulness for accidental fires. As long as there are no fires, spend money locally for men and supplies, but in case fires start, go outside for men and supplies to fight them with. If this is not practical let them burn. As soon as the community understands that no fires mean outside money for its citizens for labor and supplies and that fires mean outside men and supplies brought in to suppress them at no profit to the community, it will not be long before fires become unpopular in that community. Take the premium off incendiarism and put it on fire prevention.

THE PRICE OF PROGRESS

By I. V. Anderson, R. I.

Forty thousand acres of tax delinquent land out of an area of approximately 250,000 acres with possibilities of over 75,000 acres within a few years. That is the price Pend Oreille County, Washington, must pay for disorderly marketing and harvesting of her forest crop. Mighty forests of white pine and cedar sacrificed to the discontented God of Progress and at the will of a local public eager for economic expansion and development; all perfectly in accord with our American policy of exploitation and development of the frontier. A policy that has branded us as the most prodigal nation of the civilized world in the development of our natural resources and, in the light of present knowledge, a most inconsistent policy for true progress.

A few years ago I clipped the following news item from the "Twenty Years Ago" column of the Newport Miner published at the Pend Oreille County Seat. "Congressman (now Senator) Jones wired Attorney Rogers to-day that he had persuaded Forester Pinchot to withdraw the lands located on the west side of the Pend Oreille River from the National Forest." No doubt this was considered as a signal victory for the people of Pend Oreille County. To-day Attorney Rogers is Prosecuting Attorney for Pend Oreille County and Representative Jones is U. S. Senator. In the years that have elasped the ax and numerous destructive fires have set many milestones in the progress of Pend Oreille County's forest lands, a progress measured by townships of nonproductive land. I quote the following from Assistant Forester Kneipp's article in a recent issue of the Bulletin. "The cut-over land problem in Stevens and Pend Oreille Counties is becoming so acute that local people are now seriously considering the advisability of extending federal control over additional areas."

The prodigal son is ready to return. To-day the same citizens who demanded exclusion of these same lands from the National Forest are urging federal control. They argue that rehabilitation of some 75,000 acres of bankrupt forest land is a national problem. Apparently it is. However, if Uncle Sam must solve these problems, should he not have a voice during their development?

SUGAR PINE ON THE METOLIUS RIVER - THE MOST NORTHERN OUTPOST EAST OF THE CASCADES

The discovery of sugar pine on the Metolius River is of interest not only to members of the Office of Blister-Rust Control but to other foresters as well. Sudworth in "Forest Trees of the Pacific Slope," published in 1908, states that "the sugar pine crosses the Cascades (from the West) south of Fish Lake and occurs on headwaters of the DesChutes River between Sink Creeks, Walker Range, and Pengra, also on south and east basal slopes of Mt. Mazama." The sugar pine on the Metolius River, which is on the east side of the Cascades, is about 125 miles farther north than that reported by Sudworth.

Mr. Goodding writes on March 25, 1930, as follows: "I first visited the Metolius region in October, 1928, and observed the sugar pine in that section. While it is not the dominant tree, it is abundant and much of it is excellent reproduction. As far as I know, it is confined in this immediate region to the south side of the river. It is not, however, confined to the river bottom, but continues to the southward for some distance. In scouting the upper Metolius and the region north of the Sisters and Black Butte, sugar pine was not noted. I realized that these pines were beyond the range of sugar pine as reported by Sudworth, so I got in touch with the Indian Service to learn how far north their forester had observed them. The following is taken from my October, 1928, report to the Spokane office:

'It is also worthy of note that sugar pine is reported by Patrick Gray, Deputy Supervisor of Forests of the Warm Spring Indian Agency, in Sec. 1, T. 10 S., R. 9 E. This is four miles north of the Metolius sugar pine area noted by Goodding.'"

Mr. Goodding and Mr. H. N. Putnam writing on May 1, 1929, gave further information concerning the associates of sugar pine, with particular reference to the species of Ribes found close by.

"The Metolius River (at the point where blister rust was later found by Partington and Mielke. R.G.P.) flows from the mountains into a canyon typical of the streams east of the Cascades. The surrounding country up to the mountain is comparatively level and the descent into the valley abrupt. Sugar pine, yellow pine, and incense cedar, are associated with Douglas fir, and white fir. The following species of Ribes were observed: *Ribes cereum* abundant in the more open timber and clearings; *R. sanguineum* apparently rare; *R. nevadense* seedlings very abundant along two streams (it is possible that this may prove to be *R. sanguineum*); *R. petiolare* abundant along the main river and on some side streams entering the river from the south side; *R. lacustre* rather abundant in swampy places throughout the area; *Grossularia inermis* observed in three places in some abundance; and *G. lobbii* rather abundant but more limited in its distribution of the area."

According to the map prepared by Goodding and Putnam, sugar pines were noted in T. 11 S., R. 10E., in Sections 2, 3, 11, and 13. Roy G. Pierce in "The Blister Rust News for April,

CAMP STOVES MADE FROM ICE CANS GIVE GOOD SERVICE

Region Five for several years has been using camp stoves made from discarded 1' x 2' x 4' ice cans secured from ice factories, and has found them to be cheaper and better than any other kind of camp stoves.

The cost is as follows:

Stoves (ice cans) delivered	$ .15
2 Joints 5" stove pipe	.27
Metal Doors, including cutting and attaching	.25
Cutting holes for pipe collars and door hinges	.12
Stove pipe collar, attached	.26
Total cost per stove	$1.05

In a report to the Washington office Assistant Regional Forester Barrett said:

"These stoves will last 4 to 6 years. Last year we put 250 of them on public camp grounds and the campers were highly pleased with them. When provided with a door so the draft can be regulated they are almost fire proof and greatly reduce the danger of fire escaping from the camp grounds. The doors are cut from sheet metal and hung on with 3 wire rings. Holes for collar and door hinges (or rings) are burned out with acetylene burners. The collar is attached to the stove with three 5/32 x 1" round head stove bolts. We purchased a spray gun for $17.50 and spray all of the cans with crank case drainage oil to check the corrosive action of the brine that is used in manufacturing ice. This is done before they are made over into stoves. We find that by setting these stoves up on a loose rock foundation which is filled in with sand or earth that they are much more convenient to use and will not rust out nearly so quickly."

MOVIES!

"Dear Ed-

"I see by the Official Record that 'movies are Valuable in Eradicating Tick.' Heh, heh,! All I know aint what I seen in the papers. I learned this as a boy when I seen our ol' spotted shote contact the corner of the cowshed. His movies was most significant but I don't think they touched his heart like them PR boys does the rural folks. In the AEF a variety of movies was used to eradicate cooties. You might tell them PR boys so's they could increase the practical value of their stuff.

Glad to know these PR movies has some practical use. They was one other time, - when they showed the Klamath Injuns more efishunt ways of settin fores fires. Reminds me of that snappy scenario depictin the tragedy of Blister Rust thro the mejum of the famly afares of Mr. and Mrs. E. C. O'Spore - That would a been just as touchin' - say to New York's finest, only Herr Prof. Dr. Emil P. Meinecke didn't like the Irish of it. You never can tell what them PR boys'l do tho.

In case you accept this they aint no charge. I aint signin this cause I don't want no publicity.

RESEARCH COOPERATION

The conference on Wild Life, Forest, and Range Problems called by President Homer L. Shantz of the University of Arizona for April 26 was attended by approximately 65 delegates from Texas, Colorado, New Mexico, Arizona, and California representing colleges, experiment stations, state game departments, government bureaus, water users, and stock associations. Water was recognized as being a limiting factor not only to agriculture, but also to the general use of the land in the Southwest. The serious nature of accelerated erosion; the difficult problems of maintenance of vegetative cover in the face of an over-increasing human population, the problems of game, and the problems of water conservation and use were given careful attention by the group. This meeting was the first attempt to bring together all research agencies and others interested in the maintenance and use of the national resources of the region and to focus attention on the need for coordinated effort, placing emphasis on the fact that all of the natural resources are closely interrelated. While this is primarily an Arizona project neighboring States were invited by Dr. Shantz to cooperate. - Region 3

YE EDITOR DISCOVERS

One of our bills designed to simplify and facilitate National Forest administration has passed both Houses of Congress and will doubtless be signed by the President before this issue of the Bulletin reaches its readers. This bill confers authority on the Secretary to authorize an expenditure up to $8,000 annually on sanitary and water systems at ranger stations in excess of the $500 limitation now in effect on each such installation. It also provides for reimbursement to owners of private property for damage caused by Forest Service operations where there is no negligence on the part of any Forest Service employee. Authorization is also granted to expend official time and funds searching for recreationists or other visitors who become lost in the woods or who are injured or killed while in the National Forests. This bill, which will become effective immediately upon signature of the President, will very satisfactorily relieve conditions which have hitherto prevailed in the different Regions with respect to the activities enumerated. The first provision is more particularly applicable to Region 3, where considerable difficulty has been experienced in developing water systems at ranger stations within the $500 limitation.

- - - - - - - -

As a result of conferences between the Forest Service and the National Fire Protection Association, a committee is to be organized of representatives of national associations. It is hoped that this will be something more than just "one more committee." The use of safety measures and all sorts of fire prevention precautions can often be stimulated most effectively by national organizations working through their own channels of influence and deriving their impetus from such groups as those which the National Fire Protection Association has organized in numerous fields.

- - - - - - - -

The President's plan to appoint a National Timber Conservation Board in the near future was announced by the Secretary of commerce at the annual meeting in Washington of the National Wood Utilization Committee. We hope to be able to tell more about this soon.

- - - - - - - -

The report of the Classification Board on classification of field positions gives little cause for rejoicing. The present work is purely preliminary, and no actual field classification legislation can be expected for at least a year.

- - - - - - - -

Griffith's report on the educational campaign in Eastern Oregon in the fall of 1929 is a mighty interesting one. An open Dodge truck with Delco unit, seven reels of motion pictures, baloptican, etc.; 102 programs and 17,134 people reached. Good Stuff.

- - - - - - - - -

The Washington office is in the throes of preparing the preliminary estimates for the fiscal year 1932. The peculiarities of the appropriation system under which we work are shown by the fact that estimates for 1932 are being prepared before the appropriations have been passed by Congress for the fiscal year 1931.

RANGE RESEARCH EXTRACTS

Stocking 15 per cent below the carrying capacity in an average year is recommended.

Cattle lose weight and strength more quickly on a scant water supply than on scant forage.

Further study seems to substantiate the conclusions previously reached that moderate yearlong grazing is best.

Cattle will travel up to 2½ miles to salt on a level to rolling range provided proper salting receives constant attention.

Yearlings sold in the spring should bring $15 more per head over the fall price of calves in order to break even for the extra holding period.

After improvement in color and general marking is secured, the prime requisite for bettering the grade of cattle, i. e. conformation and size, is a sufficient supply of feed and water. (Lincoln Bulletin) - Region 3

"SOCIETY" GRAZING

By Everett Lynch, Fremont

On a recent trip to the Bly country, Ranger Langfield and I went to see the new manager of a ranch in regard to a grazing preference. We made the appointment over the phone, and in ten minutes were at the ranch house. A maid met us at the door, took our hats and ushered us in and brought us the latest papers. Twenty minutes later the manager came down, riding boots polished like mirrors, white shirt, necktie, and store suit. We introduced ourselves and during the ensuing interim the deference shown us was as great as that which would have been shown the Secretary of Agriculture and his assistant. We were ushered out in like manner, poured ourselves into the puddle jumper (model T Ford) and drove off. After a silence of half an hour (I was still stunned) Langfield shook himself and said, "This is the first time in all my years as a Ranger that I have ever been treated with all the respect I felt due me!" I'm afraid we're spoiled for meeting the ordinary run of stockmen now. They won't treat us right. - Region 6.

FIRE COOPERATION WITH WHITE PINE COMPANY

Taking advantage of the presence of the "Movie outfit" on this Forest this month, states the Santa Fe News Bulletin, an opportunity was made to show at the camp of the White Pine Lumber Company at Camp Porter with the result that the basis of a plan for joint protection of the San Diego Grant and adjoining forest land has been formulated. The company's camps will be connected to the Forest Service telephone line and detection service will be given while the lookout points are occupied. The company will designate fire bosses in each camp, establish tool boxes, preach fire prevention and enforce it in their logging contracts and cooperate with us in extinguishing fires on adjoining forest land. – Region 3

OUR BIG TREE DEPARTMENT

SHOE LEATHER

By Otto G. Koenig, Whitman

Near the top of Form 874-2-L is space for the number of miles walked each day. Out of curiosity, I have figured up from these diary sheets the number of miles I walked in 1929 in connection with official business. The result divided among several activities is as follows:

Timber sales	565	miles
Fire suppression	91	"
Miscellaneous	56	"
Timber survey	46	"
Research	29	"
Land exchange	25	"
Total	812	

Some time ago the various Forests competed for biggest tree honors. This item is not intended expressly for the purpose of stirring up any such competition, but it would be interesting to know how many miles are walked by some who really walks.

- - - - - - - -

RECORD OF THE LARGE LOBLOLLY PINE TREE

Mr. Sidney A. Chappel, former Supervisor of the Ouachita National Forest gave me the following yield of "The Old Big Pine that Stood on the Ditch."

This loblolly pine tree when cut yielded 7 12-foot logs scaling as follows: 1728, 1452, 1323, 1200, 1141, 972, 927, a total cut of 8,743 feet. The stump of this tree was moved and placed on exhibition at the State Fair at Hot Springs, Arkansas, about 1912. – W. R. Mattoon.

- - - - - - - -

ANOTHER NATIVE SON

According to the Volume of Business sheets prepared on the Forests last fall, California has another "biggest". The Big Pine district on the Inyo is the largest Ranger district under Forest Service administration. It covers 924,845 acres; 30,000 sheep, 2,000 cattle, 17 small sales, and 40 special use permits are among the items of work which the Ranger handles–alone.

The smallest district in the West with a yearlong Ranger covers 27,000 acres. The principal work here has to do with the handling of 870 cattle, 18 special use permits, a cut of 400 M feet in timber sales, and the bucking of miles and miles of heavy clay roads in all but the dry months. It is the Ekalaka district of the Custer. – E. W. L.

- - - - - - - -

Barrett in describing his camp stoves made from ice cans gave the dimensions 1" × 2" × 4", which error was immediately detected by the Argus-eyed editor and his assistant. We would like to bring this to the attention of C. L. Hill.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XIV No. 23 Washington, D. C., June 9, 1930

AGE

By Warren Brush, Washington

In the May 5 issue of the Service Bulletin, Arthur Koehler gives us some novel ideas on the *actual age* of a tree. Even though his statements are largely speculative, I wish to protest, as one who has a keen personal interest in trees, against the concept he gives us. A tree is not merely a mass of cells - some living, some dead - but is a *living individual* whose age dates from the time of *birth* or emergence from the seed. Even a wood technologist working over dead tissues should not lose sight of this. According to Koehler's logic none of us mortals can be *on the average* over 3 or 4 years old with the replacement of new cells for old ones from every day to every seven years. A determination of Ann's "true age quotient index factor" would indeed give us a happy solution of the perennial conundrum, "How old is Ann?" Another complication of Koehler's argument is that living cells 250 years old have been found in the heartwood of *Parkinsonia*, and a bit of connective tissue taken from a chicken was grown in a nutrient solution and at last reports in 1929 the tissue was 17 years old and still alive and growing. Of course we know that there is a difference between a plant and an animal (at least the higher types), and therefore it might be claimed that a tree does not "die all over" like Rover, although Rover when living had a considerable amount of hair and bones.

A discussion of age is not complete without a reference to death. Raymond Pearl of Johns Hopkins in 1922 published an excellent book, entitled "The Biology of Death," in which he concludes that death is the result of differentiation and extreme complexity of cells, which occur in the higher forms of life, and as the result of this complexity these cells lose the power of reproducing themselves. Thus we know that in the lowest forms of life the natural life of the cells has no age limit. This explains why trees with their simple structure, as compared to the higher animals, may attain such a great age.

Not only is man's natural length of life limited by the complexity of his cellular structure but also by the growing complexity of his economic life. Is it merely a coincidence that even man's association with trees and the "simple life" in general will postpone the time of general disintegration of his cells on which life depends?

WAR WORK OF THE FOREST PRODUCTS LABORATORY, 1917-1918

By T. J. Mosley, Forest Products Laboratory

Upon the entry of the United States in the World War, the huge demands which our participation made upon the forest soon became evident, and the services which the Laboratory was able to render in the National emergency were correspondingly useful. The Forest Service promptly transferred funds from less urgent work to aid in expanding the Laboratory's staff and facilities, and large allotments for special projects were made by the War and Navy Departments. Additional space in a number of buildings was made available by the University of Wisconsin during the period of the war. Without any essential change in the Laboratory's organization plan, a more than four-fold increase of personnel, from less than 100 to 458, occurred between July 1, 1917, and the Armistice.

A brief review of the principal war projects of the Laboratory is presented in this article, from which many items of minor or indirect military importance are necessarily omitted for lack of space.

SPRUCE FOR AIRPLANE CONSTRUCTION

An outstanding necessity in America's war effort was the development of great quantities of spruce for aircraft production. The supply of air-dry spruce had been virtually swept clean by previous purchases of the Allies. To insure a rapidly expanded production the only recourse was kiln drying.

The Laboratory therefore prepared kiln-drying specifications for spruce and the other principal aircraft woods, which were speedily approved by the Signal Corps and became the standard for both the Army and the Navy.

Under these specifications it was possible to dry 3-inch green spruce planks in 21 days, as compared with an ordinary air-drying period of six months to a year. Batteries of kilns suitable to a large spruce production program were erected by the Army, the Navy, and commercial operations with the technical advice and assistance of the Laboratory.

WORK ON DESIGN OF AIRCRAFT PARTS

There was immediate demand for accurate strength figures for woods used or proposed for use in aircraft design, and the Laboratory supplied the needed information from data on hand and from thousands of tests of green and dry material. The list of approved substitute woods issued by the Bureau of Aircraft Production was based upon the results of Laboratory studies.

In approaching the problems of wing-bean design, the first Laboratory project was the preparation of specifications based on permissible defects in the material. This specification immediately made available many serviceable beams which had previously been rejected.

Investigation into the relative merits of various types of built-up airplane wing beams was undertaken early in 1918 at the urgent request of the Bureau of Aircraft Production. This work resulted in the evolution of a satisfactory built-up beam after an intensive test and study of 300 variations of ten main types of construction had been made.

Among aircraft parts which seemed to suffer most from poor design were the wing ribs, not only of the training planes, but also of the fighters. A standard type of small and medium ribs was developed and applied to a number of Army and Navy planes. So far as known, the new type was an improvement over all existing types.

A rather extensive series of tests on struts showed that methods of inspection could be improved materially and that certain special types of strut were not satisfactory. A noninjurious method of test or inspection for maximum load capacity was devised and later adopted by the Army.

Tests were undertaken, as opportunity offered, on various special details which were giving trouble, and in several cases new and important principles of construction were developed. In most instances these centered about the use of plywood.

A new engine bearer of 1-inch plywood was designed for the DeHaviland plane. Several large elevator spars were designed for Navy flying boats, and in the progress of the test an entirely new type of built-up construction was perfected.

GLUE INVESTIGATIONS

Closely associated with aircraft problems was the all-important one of glues and gluing. The first request for help came from the Signal Corps in the spring of 1917, asking for assistance in hide glue inspection. No practical standard system of grading and inspection was available, but one was quickly developed at the Laboratory and was used thereafter for the inspection of all hide glue used by the Army Air Service and much of that used by the Navy Air Service.

Attention was then directed to the vital importance of using water-resistant glue in aircraft construction, and the development of several types of water-resistant glues was immediately undertaken.

Within a reasonable time, high-class glues of two types, blood albumin and casein, were made available to the Bureau of Aircraft Production. Regular inspection and test of samples of plywood glued at various plants had been established early in the study and was maintained.

PROPELLER WORK

Change in moisture content due to atmospheric conditions, with consequent warping, twisting, and unbalancing of the blades is a common trouble of wooden aircraft propellars. An important war-time investigation concerned itself with the various kinds of finishes and treatments of wood propellers with water-resistant substances. Thus was brought about the invention and perfection of the aluminum leaf coating, which is practically impervious to moisture so long as it remains intact.

A very elaborate and costly series of tests on full-sized wooden propellers, made up under carefully controlled conditions, was performed by Laboratory men to study the many natural and manufacturing variables involved and to determine their effects on the finished propeller. The species entering into this study were mahogany, African and Philippine woods, white oak, red oak, hard maple, yellow birch, yellow poplar, and red gum.

KILN DRYING OF HEAVY WOODS

The demand for tremendous quantities of Army escort wagons, automobile trucks, and artillery wheels almost immediately exhausted the supply of air-dry stock available in the country. The problem here was to get the wood dry as quickly as possible, even if considerable degrade occurred.

Successful kiln drying of the necessary vehicle stock required very careful control of kiln conditions. The only type of kiln which at that time seemed susceptible of sufficiently close control was the water-spray type, which was accordingly recommended and a suitable drying procedure developed. Laboratory assistance was given at government-owned plants and arsenals and at contract plants in the design, erection, and operation of numerous kilns handling heavy stock.

An important problem involving wheel stock was the steam-bending of the felloes, the losses at many of the plants being very large. A field study of this problem was undertaken and certain principles determined, the adoption of which cut down the losses materially.

The quantity of walnut gunstock blanks needed was beyond belief. The first attempts to kiln dry green walnut, when the available air-dry material disappeared, resulted disastrously - an instance being recorded when the opening of kilns at the end of a run disclosed 60,000 totally ruined blanks with a loss of $72,000 in material costs. One firm with an order for two million rifles for Russian use called on the Laboratory in this crisis, and through its cooperation the losses were reduced to less than 2 per cent. When the United States entered the market for greater quantities of rifle blanks than ever, facilities existed for filling orders without loss and with but little delay.

(To be continued in next issue)

CONCLUSION OF A STUDY ON RECOVERY OF WESTERN YELLOW PINE SEEDLINGS FROM GRAZING DAMAGE

By Herman Krauch and G. A. Pearson, Southwestern For. Exp. Sta.

This investigation has brought to light a number of new and important facts on the relation between grazing and forest reproduction. These are here summarized as follows: Within certain limits, western yellow pine seedlings and saplings recover from grazing damage, and, as far as can be ascertained from external appearances, they eventually develop into normal trees. The chances of recovery decrease with severity of damage. It follows, therefore, that continuation of damage decreases the chances of recovery. Broken tops repair themselves with remarkable celerity. On the other hand, the forms of damage that greatly curtail the amount of leaf surface, such as severe biting of shoots and extreme defoliation, lower the vitality of the tree and delay or even prevent its recovery. Recovery is also favored by size and age of the tree. A sapling three or four feet high is less likely to be completely defoliated, or to have all its growing shoots bitten off than a seedling less than two feet tall. After a height of three feet is attained, the upper shoots begin to extend beyond the reach of sheep. Even at a height of one foot, the chances for outgrowing the effects of browsing are favorable, unless severe damage is continued from year to year. If a seedling is old enough to have several branches, the chances are that one or more will escape each year. However, it is only under the most extreme overgrazing that leaves more than one year old are eaten. If only about one-half of the new foliage and new shoots are removed, and if the same plant is browsed only about every other year, a considerable portion of the food laboratory is retained, and the plant has at least an even break. Picture now a seedling less than three years old. It is usually less than two inches tall, and has no branches. A single bite of a sheep or cow usually removes the entire crown. If only one or two leaves beyond the cotyledon stage are left, the plant persists, and if other conditions are favorable it may put forth a new shoot, and thus take a new lease on life. Practically all seedlings bitten off prior to the end of the second season are exterminated. In this stage, all the leaves, involving the entire food laboratory, are taken away at one stroke, and no new growth is put out. From the foregoing, it is evident that the most critical stage is during the first two years after germination. Under ordinary grazing conditions, relatively few seedlings are browsed during the first season, evidently because they are then too small to attract livestock. Under very heavy grazing, however, considerable numbers may be eaten at the close of the first season. In the third and following seasons, the stems are sufficiently woody so that usually only the newest portion is bitten off, thus leaving a few leaves which may enable the plant to function until a new shoot is put forth. Whether a seedling left in this condition survives depends upon subsequent damage and upon physical conditions such as moisture, shade, and root competition with older vegetation. If other growing conditions are favorable, the young seedling may overcome the handicap of losing the greater portion of its food manufacturing plant, but with other conditions unfavorable, it is doubly handicapped and the outcome is more than likely to prove fatal.

FIRE DAMAGE AND SURVIVAL

By R. D. Maclay, Olympic

We all have ideas as to the amount of fire damage a tree will stand before the effects are fatal, but to my knowledge very little scientific study has been done on this question. In 1927 Rangers Logan and Fulton tagged and examined 100 trees damaged on the Campbell fire of that year. Since then these trees have been examined twice. The percentage dead on last examination by species is:

Sitka Spruce	69%
Western Red cedar	45
Western hemlock	31
Douglas fir	19

On basis of degree of burn to the roots and trunks, the following results in terms of percentage now dead is as follows:

Species	Slightly Burned	Heavily Burned
S. Spruce	60%	83%
W. R. Cedar	No figure	82
Western hemlock	23%	55
Douglas fir	None	32

From the above you will note that to date 60 per cent of spruce, even lightly burned, and 83 per cent of spruce heavily burned are now dead. In the case of the Douglas fir you will note that none of the trees lightly burned are dead and only 32 per cent of the heavily burned trees have been killed.

This experiment covers too few trees to give accurate figures, but at least a very definite degree of fire resistance between the various species under different degrees of burn is indicated.

WEASELS

The following is quoted from the annual fish and game report submitted by Ranger H. L. Spencer of the Gunnison:

"Since weasel fur has come into prominence, this animal has become an object to most trappers. I estimate 300 were caught on and near the district last winter. Observations of the habits of this little animal make it a debatable question whether he is more harmful than useful. Twice during the past summer I saw a weasel pursue and catch a chipmunk. I gathered the impression that once a hungry weasel starts in pursuit of a chipmunk, there will be one less chipmunk when the smoke of pursuit clears away. In one instance, I was standing on the bank of a lake when a chipmunk made a leap into the water close to my feet and a second later a weasel plunged in after it. The weasel was by far the best swimmer and soon overtook and nailed the chipmunk, starting to shore with his prey very close to me. I struck and killed the weasel, whereupon the chipmunk swam dizzily around in a circle a couple of times and then made the bank and drunkenly made his escape in the woods. In another instance, I was irrigating and saw a large weasel in full pursuit of a large striped chipmunk. the chase was through sagebrush and as the chipmunk doubled back and forth near me I saw the weasel slowly but surely gaining. In a couple of minutes he overtook the chipmunk and I closed in hoping to take the weasel alive, but he relinquished his hold and made his escape. Nothing wabbly about this chipmunk's retreat; he made a good, clean, and rapid retreat.

Several years ago I had killed a grouse during a trip over the range, and upon arriving at the Station stepped around to the garbage can to clean it. The skinning was done and when I disembowelled it I was startled by the close proximity of a brown weasel which exhibited good intensions of coming right up my leg; I hurriedly kicked at it but it only dodged a little and again advanced, whereupon I again kicked and quickly getting hold of a stick ran the little blood sucker under the wood pile. A rat trap was hanging handy and I saw the weasel's head appear for further battle for my grouse. I dropped the grouse entrails in the can and just had time to place the set trap over the offal when the weasel popped into the can and trap. I had a hard time to keep from getting whipped after the little sucker was in the trap. It screamed and fought ferociously and managed to get out of the can before I could kill it. This illustrates the animal's extreme foundness of grouse, and I have often wondered to just what extent it preys on grouse both summer and winter.

Prairie dogs are most too tough a proposition for the weasel, as was evidenced by an encounter I witnessed between a caged weasel and a prairie dog the past summer. The weasel was of the large variety, and the prairie dog was of medium size. Immediately after the prairie dog was placed in the weasel's cage, the weasel started action. With the prairie dog reared up on its hind legs in defense, the weasel repeatedly feinted with its quick little darts and then fastened onto the praric dogs nose. He repeated this a number of times until the prairie dogs nose was bleeding profusely, and then darted in for a throat hold. Prairie dog and weasel went over and over, and we watchers wagged our heads wisely and opined it was all over but the funeral. But they came apart and the weasel didn't seem so keen for battle afterward. Although he repeated his tactics after we upset the prairie dog on him once, he could not kill the latter and never did kill it."

YE EDITOR DISCOVERS

A special committee of the United States Senate has been appointed to investigate all matters pertaining to the replacement and conservation of wild life. The research work necessary in connection with this investigation will be of very large proportions, and it will probably require a year or more to assemble, classify, and digest the facts. A vast range of subjects will be covered, including federal game reservations, bird sanctuaries, wild life in the National Parks and Forests, the problem of migratory birds, of upland birds, or predatory animals, and of fishes of the Atlantic, Pacific, and gulf and inland waters. The plan of the committee is to make an exhaustive study of all of those problems and of the laws connected with them. After all recommendations from governmental, individual, and private sources have been assembled and studied, it is the intention of the commission to recommend to the United States Senate any changes or additions that they consider necessary in or to existing laws pertaining to conservation.

Senator Frederic C. Walcott is chairman and Senator Harry B. Hawes is vice chairman of the committee. Other members are: Senators Key Pittman, Charles L. McNary, and Peter Norbeck.

Major Stuart went to the Arlington National Cemetary with the Memorial Tablet Committee - Herbert A. Smith, J. M. Witherow and R. V. Reynolds - on May 28 to visit the grave of Stanley Augspurger, member of the Forest Service who lost his life in the World War, and who is the only one of the Forest Service dead buried in Washington.

Proclamations changing the boundaries of the Pike, Gunnison, Arapaho, Routt, and Cochetopa National Forests were signed by President Hoover on May 26. By these changes the Leadville National Forest is abolished and its lands transferred to the Pike, Arapaho, and Cochetopa Forests. The purpose of the changes in boundaries was to reduce the cost of administration.

A new National Monument, "Sunset Crater," has been created by Presidential Proclamation dated May 26. This monument covers an area of approximately 3,040 acres, located within the Coconino National Forest, Arizona, and consists of geologic formations of volcanic origin.

The Editor reported in the May 19 issue that the reports of the Committees at the Regional Foresters Meeting were in the hands of Haynie for printing and should reach the Regional Foresters by the time that Bulletin was being read.

A letter has been received from Haynie asking "How does the Editor get that way?" and pointing out that the manuscript for the job only arrived in Ogden on May 20. The job of printing the reports, with charts, tables, etc., is considerably larger than originally expected and Haynie says it will be at least June 3 before he can complete the job.

The note by the Editor was based on information secured from a high official in the Branch of Operation. Said high official declines to make a statement as to why his estimate was so far off. So Ye Editor, as usual, takes the rap.

The little nugget on the last page has only recently been dug up. We showed it to the author and after considerable persuasion got un-enthusiastic permission to publish it. We think we deserve your thanks for our effort.

THE SUN WAS SICK

During the recent elipse while the population were viewing the sun with smoked glasses, the Taos Indian pueblo took a much more serious view of the phenomenon. They believed that the sun was sick and that this sickness was also the cause of the recent cold weather and storms. A council of the wise men was called and met daily for several days to cure the sun. All work was suspended for four days, for what would be the use to plow the field and put in crops unless the sun could be cured. The attendance at the Indian School also dropped off noticeably and those who came were listless and few had the temerity to risk a look through a smoked glass on the fateful day. The childerns' spring races were also postponed several days, much to the disgust of the tourists who were paying good money at the local hotels waiting to see them. Not until the recovery of the sun was well along would the Indians permit the races to be run. Judging by the weather the sun is still a little weak and may even have suffered a relapse. - Region 3

TREE MEN "DENDRICIANS"

The man who cares for trees now has a professional name - he is a dendrician. The name was coined by T. H. Reuman, principal of the Bartlett School of Tree Surgery at Stamford, Conn. It comes from a Greek root, dendron, meaning tree. - Clipped

REMINISCENCE BY R. V. REYNOLDS, WASHINGTON

Back in the early eighties,
'Tending the village school,
Cupid was working mishief
Spite of the master's rule.
Ladies in frock and pigtail,
Each had a youthful beau,
Gallants in knickerbockers
In the days of Long Ago.

Glance from a brown-eyed lassie
Settled my future fate;
Learned that I loved her madly
At the tender age of eight!
Made sheep's eyes till the master
Much to my shame and woe,
Sent me to sit beside her
In the Days of Long Ago!

I was a towhead youngster
Awkward and slim and shy,
She was a winsome lassie,
Roguish of word and eye.
Sweet and coy and coquettish -
(I was painfully slow!)
Wanted to hug her, and -- daren't
In the Days of Long Ago!

Thought if a tramp should scare her,
How I would bang his head.
Hoped that a bull might chase her
So I could kill him dead!
Grew quite sulky an jealous
When Harry and Will and Joe
Led her out at the dances
In the Days of Long Ago.

Once, alone in the garden
Hither my lady trips,
Fastens a rose at my bosom
Red as her own red lips.
Something inside said "Kiss her!"
Cowardice counseled "No!"
Wouldn't listen to counsel
In the Days of Long Ago!"

Nothing is left but the glamor
Of the happy boyish days;
And the little maid has vanished
With her merry teasing ways.
But I dream of my childish sweetheart
And I sometimes think she knows,
And is waiting there, in the Garden
To bring me another rose!

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER

Theodore Roosevelt

Vol. XIV No. 24 Washington, D. C. June 16, 1930

MORE ABOUT PUMPS

By William V. Mendenhall, Angeles

An article that appeared in the Service Bulletin of March 31, 1930, by Henry L. Spencer, with the heading "Digesting our Fire Suppression Ideas," I believe would bear further discussion. It seems to me that Spencer has brought out some very important facts in connection with the gradual change of our tactics, strategy, and methods of tackling our fire suppression problem. We hear a great deal of discussion between our own men and men on other Forests that is similar in a way to the arguments by Sandvig, Girard and White cited in Spencer's article, but in the end we have to admit that water has a "profound quenching effect." We must admit also that our pump chances, as the term is used in that article, are possibly very much limited at the present time, but here in Southern California we have certainly arrived at a place in our fire suppression plans where we must look forward to the development and making of our pump chances previous to the time a fire starts. As a matter of fact this work has already been undertaken in a small way and will be developed more rapidly in the next few years.

In the last analysis the pump and hose are simply a relay of the water from the spigot to the fire. The same problem confronts us in connection with placing the spigot closer to the location of the fire as confronts a city fire department in extending their water mains. We are working now on a water distribution map of the Angeles Forest and are finding out that many pump chances can be made available without any great expenditure of money. Of course some chances will be costly, but we have expended from $500 to $1000 per mile to construct 450 miles of firebreaks from 20 to 60 feet wide, and these require much man-power to make them effective in controlling a fire.

The development of the pump to a point where it is entirely possible to fill in the relay from the spigot to the fire has made it possible for us to really plan on water distribution. Along with this sort of scheme for fire protection must go a program of low standard roads so that heavy pump equipment may be placed quickly in places where it is necessary to pump water any great distance. This is especially true in Southern California where we have such a limited supply of water to deal with. We talked about the use of water on forest fires for a good many years before we actually began using it, except possibly with the "tomato can" method; but the development of this method is past the talking stage and I believe is going to develop by leaps and bounds within the next few years. This is evidenced not only by what we are doing but also by the interest that is being displayed by the manufacturers of various types of pump equipment for our use. The tank truck, the use of which has been developed in the last two years, at least in California, is going to take a major part in this kind of protection, as it furnishes the further relay or gap between the end of the nozzle on stationary lines of pumps and the actual fire. I believe it will prove to be the most important part of our equipment in connection with handling fires while they are small.

WAR WORK OF THE FOREST PRODUCTS LABORATORY, 1917-1918

Abstracted by T. J. Mosley, from Decennial Record 1920

(Cont'd. from June 9 issue)

War-Time Box Work

The first difficulty in connection with the boxing and crating of goods for overseas came when the Ordnance Department sent out requests for bids on boxes, using its standard specifications for high grade white pine. No bids came back. The help of the Laboratory was sought, and, on the basis of its previous tests, a specification was prepared which allowed the use of many different kinds of wood, the thickness of the boards or shooks varying according to the species. This solved the immediate difficulty.

Additional work at first largely consisted in the redesign of containers for rifles, shells, hand grenades, machine guns, saddles and harness, and other equipment for the Ordnance Department In nearly all cases it was possible to make a material reduction in the size and first cost of the container without reducing its efficiency. The redesign of the standard package carrying two Browning automatic rifles netted a saving of 33 per cent in cargo space valued at $6 per cubic foot.

Later, definite cooperation was arranged with the Office of Industrial Research of the Division of Purchase, Storage, and Traffic, which acted as a clearing house and systematized the packing work to a great extent. When baling of goods was adopted to cut shipping space to a minimum, many tests of water-resistant covering papers were made. Various patent boxes and different types of straps and seals were also investigated.

Laboratory Participation in Wooden Shipbuilding

Laboratory cooperation was called upon in the drafting of new grading rules for ship timbers adopted by the Emergency Fleet Corporation and in the revision of construction rules of the American Bureau of Shipping. Assistance was also rendered in the inspection of timber under the rules of the Emergency Fleet Corporation and in preparing specifications for creosote and its application.

A shortage of black locust treenails in the spring of 1918 threatened to hold back the rate of wooden ship construction at a number of yards, and the Laboratory was called upon to find new kinds of wood for treenails and to specify means of artificially seasoning them. Live oak and osage orange were selected as alternative species, and specifications were adopted allowing their use.

Furthering the Chemical Warfare Campaign

One of the most urgent needs of the Army was for a highly absorbent gas mask charcoal for protection against chlorine. The Laboratory prepared a beech-wood charcoal which met this requirement. The manufacture of a similar charcoal was immediately undertaken at a distillation plant under the supervision of a Laboratory chemist. Later on it became desirable to find a substitute for the very dense charcoal made from cocoanut shells, which was capable of absorbing a number of gases against which the beechwood charcoal was ineffective. A series of artificially dense charcoals from hydrolized wood sawdust were developed by the Laboratory the best of which were almost perfect substitutes for cocoanut shell charcoal.

It soon developed that the aircraft program would demand twice the current production of acetic acid for the preparation of cellulose acetate "dope" used to shrink wing fabric. The Laboratory acted in a consulting capacity in all the work of the Signal Corps to increase acetic acid production, and assisted manufacturers to secure greater yields.

Later, when the acute demand made cost a minor consideration, a method of more than trebling the yields of acetic acid by fusion of the wood with caustic soda was perfected.

Miscellaneous War-Time Activities

Among the many research and testing projects related to the prosecution of the war which can not be given detailed description for lack of space, may be mentioned the successful purification of wood cellulose to supplement the supply of cotton linters as a base for explosives production, just as the war ended; the preparation of specifications for creosote, ties, and wooden car material for the Railroad Administration; the identification of 18,000 wood specimens submitted in the course of war work, including the identification of certain gas mask charcoals; and examination for stain and decay of wood for important structural and military uses.

Much of the progress made by the Laboratory in years of research is embodied in the manufacturing and purchasing specifications of the various Army and Navy bureaus and of many industries. Several hundred such specifications were referred to the Laboratory for criticism and revision during the war.

Instructional work afforded another means of making the Laboratory's knowledge effective. The first course for airplane inspectors was given in July, 1917, and succeeding courses were held at intervals of two or three weeks until the close of the war. About 125 men received this instruction. Courses for box inspectors, principally for the Ordnance Department, were attended by about 90 men. It is reported that a new type of cartridge case box designed by one of these men saved the Ordnance Department $50,000 on the first contract, besides saving $100,000 worth of cargo space.

PUBLIC LANDS COMMISSION MEETS

The Public Lands Commission met in Washington on June 2, 3, 4, and 5, all members being present except the Colorado delegate, Mr. Monahan, and Colonel W. B. Greeley. On the evening of the 3d and the morning of the 4th, the Forester and others were asked to appear before the Commission. From the information secured and the questions directed at the Forest Service it would seem that the Commission is pretty well divided on some of the main problems at issue. There are, of course, advocates in the Western States of turning over the Federal lands to the States. Opposed to these are certain western representatives who contend that the States are unable to give the form of administration which the situation justifies. The third group of the Commission are perhaps unfamiliar with the Public Domain problems but are trying to get the facts on all issues. The value of the Public Domain for various purposes has received a great deal of consideration, and it is evident that watershed values are paramount to most of the other considerations, although the delegates advocating State ownership have indicated that the watershed values can be protected as well under State ownership as grazing or timber values.

Some very excellent reports have been submitted to the Commission by the different members from the Western States and the Commission is collecting a fund of information which should enable it to reach a satisfactory conclusion. There is a possibility that certain members of the Commission will make a trip to the Western States, hold a few hearings, and investigate the problem.

The Commission also indicated a very keen interest in the administration of the National Forests and propounded a good many questions which showed clearly that it had been considering administrative questions. At the conclusion of the Forester's statement the Commission asked the Forest Service to submit data on (1) the area of timber land in the Public Domain by States which should be included in the National Forests; (2) the area of Public Domain which might be included in the National Forests for watershed protection purposes; (3) the area of grazing lands that might be included in the Forests to round out administrative units; (4) the total acreage of public Domain valuable for watershed protection. While the original report to the Public Lands Commission contained information on the above classification of lands, it is apparent that the Commission desires to know much more about lands of value for watershed purposes. To supply these data the field will be requested to submit the necessary reports to be presented to the Public Lands Commission at their next meeting in the fall. - C. E. R.

THE EDITOR'S SOLILOQUY

(On receiving a particularly tough and voluminous manuscript.)

TO PRINT, or NOT TO PRINT - that is the question?
Whether 'tis nobler to let go as was - the forty thousand words
Telling of cattle, sheep, and goats, and other things by herds;
Of forage plants and pests and plagues, galore and then some more;
Of trees and forests, floods and streams, and wild life - all encore;
Of mountain peaks and canyons deep and clouds above them curled;
Of ranges vast and wild and bleak, in fact a little world,

- - - - - - - -

Or - to restrain the wanderlust by many ruthless changes,
To level mountains with the shears and cut in parts the ranges.

- - - - - - - -

Or - to end it all with pencil blue, to let the red tape tangle,
To butcher stock and cut down trees and end the bally wrangle.
To let the poor thing linger on, or let it swoon and die?
Do you know which to do with it? If not, then why should I? - D. P. E.

SOME BASIC TIMBER GROWTH DATA BEING SECURED

During the past summer considerable of a start was made in getting basic data on growth of cutover pine stands in and near the Las Vegas District by Mr. Wales. Thousands of acres of cutover land are found here which are being wasted through the ill-advised cut of small poles for mine props. The study tends to show that in the long run the land owners could afford to withhold cutting until the trees are at least of a size to make two railroad ties. Of course, where the ownership rests in the hands of small ranchers it is hardly expected that they will hold off for any period of this kind, since in the sale and hauling of timber a considerable part of their livelihood is found. However, there are quite a number of fairly large estates on which the owners have shown sufficient interest to warrant our undertaking some educational work in showing them systems of thinnings and improvement cutting. Assistant Supervisor Roak and Ranger Bruhl are now engaged in visiting these holdings on this work. Great things start from small beginnings and it is hoped to gradually extend the work as fast as the owners show proper interest in it. The territory tributary to the Santa Fe Railroad from Las Vegas to Raton contains much of the most valuable forest land in the State by reason of its accessibility and has had extensive timber business since the building of the railroad in 1878. With proper cutting methods it can forever supply a class of products in demand in the coal mines and for railroad ties, and could furnish constant employment for the surplus farm labor of this heavily populated region, now moving out in large numbers to the beet and potato fields of eastern Colorado and western Kansas. Nowhere in this Region is such excellent reproduction found over such extensive areas but the existing method, or lack of method, in cutting all accessible trees as soon as they reach tie size with no thought of seed trees will prove ruinous within a few decades unless some better system of forestry is soon put into practice. - (Santa Fe News Bulletin) R. 3

STATE FORESTER BEING SOUGHT FOR TENNESSEE

Mr. Henry E. Colton, member of the Board of Forest Conservation of Tennessee and of the committee of that Board appointed to assist Dr. Fitts, Chairman of the Board and Commissioner of Agriculture, in the selection of a successor to Mr. Maddox, State Forester, whose resignation is in the hands of the Board, would like to receive applications from qualified members of the U. S. Forest Service who wish to be considered for this position. Mr. Colton states that the salary available for the position is $4,500 per annum. All applications and requests for information should be made directly to Mr. Henry E. Colton, 901 Stahlman Building, Nashville, Tenn.

YE EDITOR DISCOVERS

Several objections having been made to absolute closure of the National Forests to smoking during the fire season, Region 6 has decided to adopt a restriction which will in effect make the smoker's code a legal requirement within its Forests. The following rstriction, it believes, fits in with all the efforts which have been made to curtail smoking and is certainly so reasonable that there can be no grounds for objection on the part of anyone.

"Except on paved or surfaced highways, smoking on lands of the United States within the National Forests of Oregon and Washington is prohibited while traveling in timber, brush, or grass areas from July 1 until the close of the fire season as declared by the Regional Forester, but not later than September 30."

Regional Forester Buck in a letter to his Forest Supervisors says:

"During the current season it will be inadvisable to vigorously enforce this restriction. Violations should be handled with caution and warning, reserving court action for use in flagrant cases. It is appreciated that difficulties may be encountered in enforcing this regulation, since anyone traveling along a road or trail while smoking would simply have to stop when an official appeared in order to conform with the regulation. It is believed that this restiction will be well sustained by public opinion and that there will be no difficulty in securing action in either State or Federal courts."

- - - - - - - -

Although busy with his administrative duties, Regional Forester Show finds it possible to keep up some of his research projects. Thus, last fall he remeasured one of the permanent sample plots located in a pure stand of yellow pine on the Shasta Forest. He found that in this locality, the pine in 39 years produced almost 20,000 feet per acre, which is the average timber cut by the McCloud River Lumber Company. In the past 15 years the increased size of the trees in this stand was responsible for a volume increase of 8,325 board feet, or from 600 in 1913 to 9,825 in 1928. In the past five years this was at the rate of 1700 board feet per acre.

- - - - - - - -

A memorial to Theodore Roosevelt for his leadership in the cause of forest conservation has been authorized by a bill signed by the President on June 2. By this bill the Secretary of Agriculture is authorized to erect a suitable archway spanning the Theodore Roosevelt International Highway on the continental divide at the summit of the Rocky Mountains on the boundary between the Lewis and Clark National Forest and the Flathead Forest. The sum of $25,000 is appropriated for this purpose. The bill states that "said archway shall be erected during the year 1930, which is the twenty-fifth anniversary year of the forming of the present Forest Service."

- - - - - - - -

Another examination of the Kaibab deer range was made early this spring by representatives of the State of Arizona and local Forest officers. This investigation showed that while some of the east side ranges were recovering, numbers of deer on that side must be further reduced if improvement in forage conditions is secured sufficient to serve the needs of the deer in the event of poor seasons. A further decline in the winter range was found on the west side of the Forest. The committee not only agreed to a continuation of the plans that were in effect last year but also advocated an increase in the bag limit allowed so that one buck and two does might be removed by each hunter.

- - - - - - - -

Road construction can now proceed, since the Secretary has approved the programs under the four and a half million dollar authorization for the fiscal year 1931. It is expected that Congress will pass a deficiency bill authorizing obligation of the five million dollar appropriation for 1931, which will permit a greater amount of construction work within the National Forests.

- - - - - - - -

Chief Engineer T. W. Norcross sailed on the "America " June 4 for a visit of several weeks in Europe, mainly in Germany, Norway, and Sweden. With Mr. Norcross are a number of other engineers, representing both governmental and private concerns. The purpose of the trip is to make a study of the technique, organization, and methods of handling, estimating, and reporting waterpower and other hydraulic work in Europe. During the trip Mr. Norcross will attend the meetings of the International Electrotechnical Commission, at which an attempt will be made to reach an international agreement on a method for rating rivers.

FIRE PREVENTION ON LONG ISLAND

The recommendations for additional protection against forest fires on Long Island contained in the report made to Acting Governor Lehman by the special committee designated to study the problem seem modest enough. But even a small increase in the force of fire wardens and watchers is better than nothing. Hence it is to be hoped that the recommendations will be promptly acted upon.

They call for six additional fire towers, making a total of nine in the area. These are to facilitate the task of watching for fires. For each tower there is to be a fire truck and crew of two men, making eight in addition to the one already provided. In addition to the special fire patrols the patrols of the Department of Public Works, as well as the employees of the State parks, are to be equipped with the special fire-fighting knapsacks and organized under foremen so that in an emergency they may cooperate with the regular fire patrols.

So much for the personnel and equipment. In addition the commission advises constant publicity and recommends that the towns and counties be requested to cut back and remove all brush, weeds, stumps, etc., along the right of way of all county and town roads. This would doubtless be helpful, but it might be well to go even further and to incorporate into the New York laws that provision of the California laws which is designed to check the tossing of lighted cigarettes, cigars, and matches from automobiles. In California it has been found of great aid during the dry season.

No one has yet been able to discover why the American people are so unwilling to pay for fire prevention work. Throughout the State and National Parks and Forests it is the same story. For years, to take but a single example, the sum of only $10,000 was appropriated for fire prevention work in the Sequoia National Park, which has an area as large as Rhode Island and was created for the prime purpose of preserving its trees. Elsewhere similar conditions have prevailed, with the result that when fires come they are checked at a cost of many times the item for prevention, without taking account of the actual damage done.

Long Island's fire fighting problem is little different from that of New Jersey. Both regions have been swept periodically by brush fires for many decades. The local residents take a hand in fighting them. But the work of preventing them has been virtually negligible. The State would be making economies by spending even more than is requested by the special commission which has made its recommendations to the Governor. - (Editorial in New York Times)

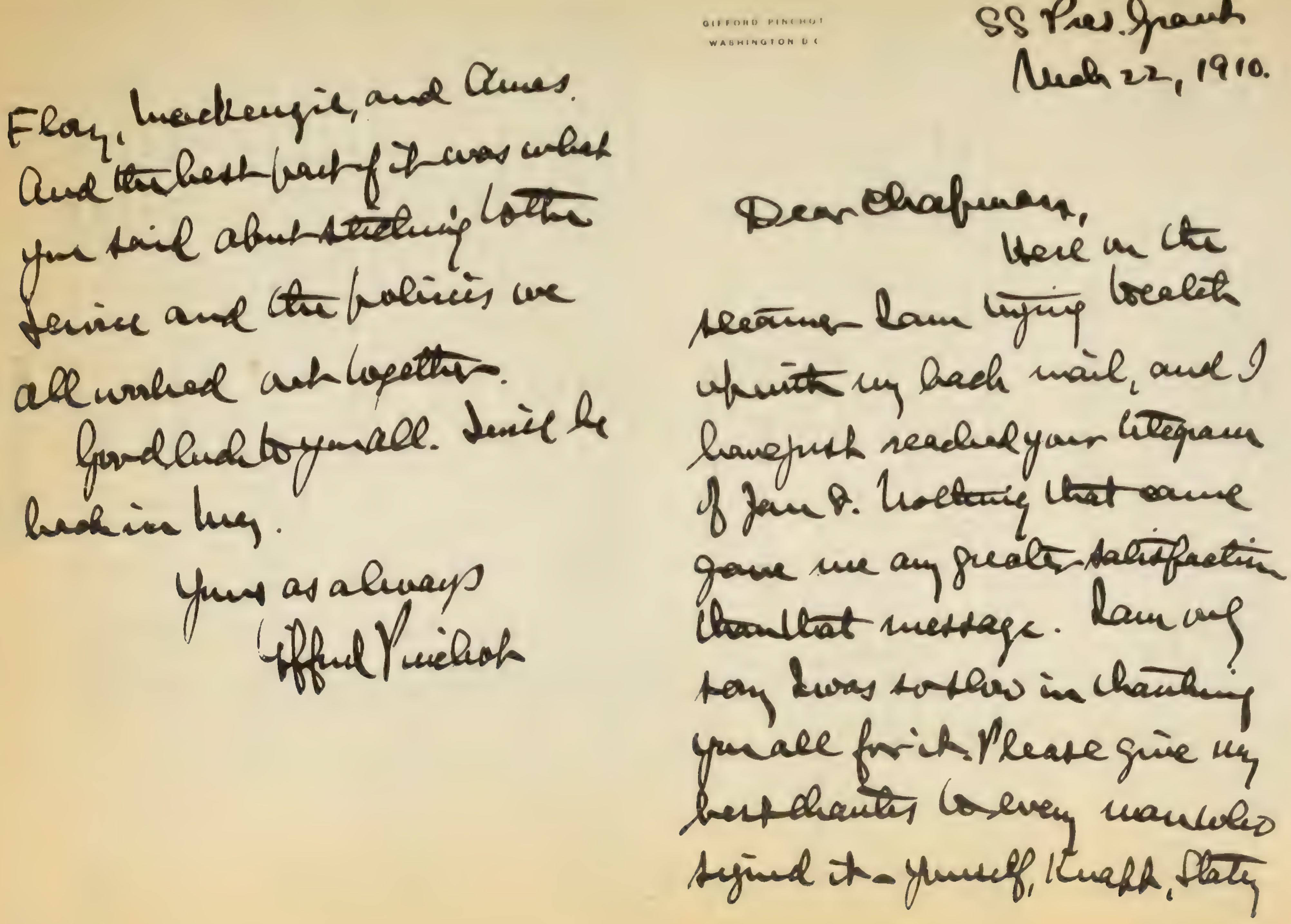
THE GOOD OLD DAYS

By E. N. Munns, Washington

The Federal Government's present building program was as nothing compared with that of the period beginning in 1793 when the Capitol Building was started. Hodcarriers and mortar mixers, diggers and choppers who from 1793 to 1800 labored on the public buildings and cut the streets and avenues of Washington through the forest that then occupied the ground received $70 a year, or, if they wished, $60 for all the work they could do from March 1 to December 20. They of course received their board in addition, but were not clothed. Incidentally, the hours of labor were from sunrise to sunset. Nothing apparently is known of sick or annual leave, what holidays if any were included, classification grades, or of retirement.

EFFECTIVENESS OF PER DIEM GUARDS

Based on a nine year record the Per Diem Guards on the Santa Fe have the following record to show for their value in the protection force. The nine year totals show that 94 fires or 20 per cent of the total number of fires were first detected by Per Diem guards; that Per Diem Guards worked on 30 per cent of all fires; that 8 per cent were put out entirely by Per Diem Guards and that 12 per cent were put out by Per Diem Guards with the help of other men but without any regular Forest Officer being present. - (Santa Fe Per Diem Guard Bulletin) - Region 3



GIFFORD PINCHOT
WASHINGTON D C

SS Pres. Grant
March 22, 1910.

Dear Chapman,

Here on the steamer I am trying to catch up with my back mail, and I have just reached your telegram of Jan 8. Nothing that came gave me any greater satisfaction than that message. I am only sorry I was so slow in thanking you all for it. Please give my best thanks to every man who signed it — yourself, Kneipp, Staty, Flory, Mackenzie, and Ames. And the best part of it was what you said about sticking to the Service and the policies we all worked out together.

Good luck to you all. I will be back in May.

Yours as always
Gifford Pinchot

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

VOL. XIV No. 25 WASHINGTON, D. C. JUNE 23, 1930

CLASSIFICATION OF FIELD PERSONNEL

By F. C. W. Pooler, Region 3

The following interesting communication has been received from the Personnel Classification Board as the result of negotiations looking to a change in the preliminary class specifications as they pertain to certain positions in the Forest Service:

"In connection with the preparation of the tentative allocation lists in accordance with the preliminary class specifications, P.C.B. Form 18, the following revisions should be made:

(1) Change the grade for Assistant Forest Ranger, SP-4-408, page 450, to SP-5-408

(2) Change the grade for Forest Ranger SP-5-408, page 451, to SP-6-408

(3) Change the grade for Senior Forest Ranger, SP-6-408, page 453, to SP-7-408

(4) Change the titles of classes and grades for the District Forest Ranger Series, page 449, to be as follows:

District Forest Ranger (Class 1 District) SP-8-407
District Forest Ranger (Class 2 District) SP-7-407
District Forest Ranger (Class 3 District) SP-6-407

(5) For the position of Forest Supervisor there will be two grades instead of three, allocation to be under the following classes:

For a Class 1 Forest -- Forester - P-4-413
For a Class 2 Forest -- Associate Forester - P-3-413

In this connection the class of forest shall be determined by the importance and difficulty of the work and the responsibility placed upon the supervisor, as measured by such factors as, scope and character of activities, variety and volume of business, difficulty or complexity of the problems of administration, development, operation and protection, and the number and grades of year-long, seasonal and emergency employees required.

"The provisions now contained in class specifications for Assistant Forester, P-2-413, page 120, covering the position of Forest Supervisor of a minor national forest should be ignored.

"It is understood that changes in the wording of the paragraphs of the class specifications covering duties and responsibilities and minimum qualifications, necessary to reflect the amendments indicated in (1), (2), (3) and (4) above are to be read into such paragraphs pending the physical amendment of the specifications.

/s/ I. BARUCH.
Member"

As a result of additional representations, the Board has approved the use of P-5-414 for one Senior Range Examiner and a new specification to cover the position will later be prepared. While immediate use of the P-5-414 is restricted, it makes this grade available for additional men as they qualify under the specifications to be drawn, and so places the Range Management Series on equality with other professional series in National Forest work.

The Board has not been willing to concede Grade P-5-413 for Forest Supervisors, P-6-413 for Assistant Regional Foresters, or P-7-423 for Regional Foresters, but takes the position that in a matter of such importance it will be necessary for the Service to proceed in its allocation work under the class specifications as they stand, with the right to accompany the allocation papers with its arguments for modification of the specifications before final allocations for payroll purposes are made. This will be done and every effort will be made to convince the Board that the Forest Service is entitled to the higher allocations sought on the strength of relationships with other positions in the field service as brought out in the class specifications recently published. At that time too, an effort will be made to bring about additional minor adjustments.

While much remains to be done before the class specifications do full justice to Forest Service positions, a great deal has been accomplished by the above-mentioned negotiations and the resultant concessions. No effort will be spared in the preparation of protests looking to adjustments additionally needed. It is plain, however, that further adjustments for immediate use in the present statistical allocation work can hardly be expected.

JUDGING UTILIZATION OF NATIONAL FOREST RANGES

By Arthur Cramer, Absaroka

The two articles appearing in the January 20 and March 24 Service Bulletins, the first by R. R. Hill and the latter by Alva A. Simpson and E. D. Sandvig of the Custer, exhibit two different forms proposed as methods for determining the per cent of forage utilization on the range. Forest officers have long recognized the urgent need for some system that can be universally and accurately applied by the administrative personnel in determining the degree of range utilization, not only as a measure of past administrative efficiency, but also as a very important key to future improvement in management practice. Forest officers should respond freely to Mr. Hill's request for an exchange of ideas concerning this problem.

The "Formula for Recording Proper and Actual Utilization by Types" by R. R. Hill sets up for the administrative officer a desirable utilization objective, stresses the importance of average yearly volume production of forage to be considered with all carrying capacity estimates, and can be applied to grasses, weeds, and shrubs. As suggested by Simpson and Sandvig, the method proposed by Mr. Hill would be more accurate if the estimate under all captions was made during the current year. Current variations in forage volume production often go from 15 to 50 per cent above or below the normal, and when such variations occur one would by Mr. Hill's method secure results in like degree erroneous. Another solution to this difficulty is as follows: (a) Determine the current year per cent of volume forage production above or below normal by weights of forage clippings on enclosed or protected quadrats; (b) apply this figure to the column (9) result as determined by Mr. Hill's method reducing the utilization per cent figure when the current season is above normal, and raising the utilization per cent figure when the current volume production is below normal. One could also apply the per cent figure determined by (a) above directly on column 2 (height growth) figures. adjusting these figures in direct relation to current forage volume production.

The "Form for Determination of Utilization of Grasses and Grasslike Plants" by Lommasson is slightly more scientific. By the use of current ratio by weight of culms and leaves on current measurements of total length and utilization of both culms and leaves one should, theoretically at least, obtain a relatively accurate direct measure of the weighted average utilization of those plants actually measured. The result could hardly be considered as strictly accurate, since culm form factors and leaf taper are not considered. Furthermore, to apply these results directly to a utilization type, a sufficiently large percentage of the species in the utilization type should be measured to take advantage of the "law of averages," and the estimates of the "per cent of plants grazed" and the "per cent species makes up to total volume of forage type" must be accurate.

Now in this matter of obtaining measurements of a sufficiently large percentage of the species in the type to take advantage of the law of averages, very little is actually known. We do know that in Forest Management we have found that measurements of less than 5 to 10 per cent of the trees in the type will commonly bring results from 20 to 40 per cent in error. The ratio of individual grass plants to trees per unit of area will probably run somewhere between 1 to 1,000 and 1 to 200,000. We in Grazing Management with a full week's services of two trained men could hardly hope to secure direct volume and utilization measurements on 1 per cent of the grass plants on one acre of fair grassland range. In general practice, because of economic factors, we will not be able to secure volume and utilization measurements of one-hundredth of 1 per cent of the plants even in experimental areas. Who then, in the absence of more definite data, is ready to maintain that in a system of determining forage utilization based on measurements of grazed and ungrazed plants taken at random, that the measurement of less than one-hundredth of 1 per cent of the plants will bring even approximate results?

Of course some will maintain that instead of taking, (a) measurements of grazed and ungrazed plants taken at random, they will secure; (b) measurements of carefully selected average grazed and ungrazed plants, thus avoiding the necessity for a large number of plant measurements. Would it not be more difficult to make an accurate estimate of the "per cent of plants grazed" and the "per cent species makes up to total volume of forage type" as required by Lommasson's method, than to make an equally accurate occular estimate of the per cent of forage utilization on the range? Will it not be equally difficult to measure the _correct plants_ in column 5 and to make the accurate estimates for "per cent of total forage which plant represents" of column 7 in Hill's method? Does not the _ability to accurately make all these estimates_, and _to measure the right plants_ for both Hill's and Lommasson's method presuppose the examiner has a rather _definite image of the total forage production_ and the _amount of that forage which has been utilized or is left_? And if the estimator has this preconceived image on which to base his numerous estimates and selections of the _right_ plants for measurements, will he not commonly secure a _more accurate result by a direct occular estimate of utilization_ than by introducing numerous _estimates_ and _measurements_, _problems_ and _complications equally or more difficult to solve_ before arriving at the end result?

(To be continued in next issue)

WHAT BECOMES OF THE HAIR OF A FORESTER?

Dr. Jos. F. Rock, the noted explorer, writing upon Tibet, in a recent issue of the National Geographic says - "On a hillside opposite the monastary grows a forest of fir and spruce. It is of miraculous origin, says tradition. Long ago a famous monk, the founder of Labrang, got a haircut. His hair, scattered over the hillside, took root and produced this fine forest."--E.N.M.

WHAT IS A CORD?

By W. R. Mattoon, Washington

Recently the Forest Service received a letter from the Associate Editor of one of the most extensively circulated farm journals in the South. The following is quoted from the letter:

> "The assumed standard cord of pulpwood wood in North Carolina contains 160 cubic feet. It seems unfortunate that we have two measures for wood. The difference of 32 cubic feet leads to fraud. Will you please write me if there is any justification in having two legal cords? The difference is 25 per cent. Farmers of North Carolina and Virginia are taking increased interest in the sale of pulpwood."

In reply it was stated that the legal cord in North Carolina specifies 8 by 4 feet and shall apply only to the sale of firewood in incorporated towns.

Webster's dictionary gives the following definition of a cord: "a cubic measure used especially for wood cut for fuel, originally measured with a cord or line. It is now legally in the United States a pile 8 ft. by 4 ft. by 4 ft. (equivalent to 128 cu. ft. or 3.623 cu. m.), and the same measure is the common one in British usage, though it varies in different counties in England."

In central New York when the people buy a cord of stove wood they get about 1/3 of a standard cord. In a certain region in Virginia when the farmers sell a "cord" of pulpwood they deliver 180 cubic feet, or near 1½ standard cords. In other cases 160 cubic feet is required for a "cord" at the pulp mill. The question arises, what is a cord?

In line with standardizing terms used in measuring timber it is very important to include a cord. The term standard cord should be used only to apply to a rick or stack that is 8 by 4 by 4 feet in dimensions. A rick or stack measuring 8 by 4 by 5 feet should in all cases be designated as a long cord or long cord of 1 1/4 standard cords. Likewise a rick or stack of stovewood 8 by 4 feet high by 12 inches wide is a short cord or a short cord of 1/4 standard cord.

The present loose use of the word cord undoubtedly results in the aggregate in large money losses to the farmers. The term cord carries with it a mental picture of an 8 by 4 by 4 foot stack, much the same as a package of raisins although weighing only 13 ounces suggests to the average purchaser a pound package of raisins. Here the advantage is likely to be in favor of the dealer much as the long cord of wood is to the pulp or other manufacturer. The use of the terms standard cord, short cord, and long cord should be at all times encouraged.

AN INFREQUENT TRAIT

"Love of nature, latent in many men, is developed in few. Among all the writer's boyhood friends he recalls not four with whom it was a living passion. An engineering trip last summer included a quiet week in Wyoming. The writer chose to spend that time in the wildest part of Yellowstone Park––at the east entrance among rugged mountains.

"The food at 'Sylvan Lodge' was good, the rustic cabins comfortable. The writer was told that of half a million people from all America who passed this spot during the last five years, not a single person, unless detained by illness, ever lingered for a day to enjoy the most native and unspoiled region of the Park. They hurried on at top speed, usually to crowded hotels and camps and to the advertised sights.

Such is 'out-of-door life' to many Americans. Love of nature does not appear full grown. It requires native sensitiveness, contact with nature, and contagion from those in whom it already is strong." – Clipped

A FORESTRY EXHIBIT BUILDING

The Indiana Department of Conservation, for the past fifteen years, has been maintaining at the State Fair Grounds at Indianapolis a building devoted to forestry exhibits and finds that it pays. They consider that it is one of the finest ways they have of arousing public interest in forestry. Thousands of trees are sold each year to people who have gone through the building and on returning home have written in to place their orders. It is estimated that nearly ten thousand people visited the forestry building at the fair last year.

The building, as pictured above, is 30x40 feet. It is finished inside in panels of white oak and presents a very pleasing appearance. The forestry exhibit consists of boxes of forest seedlings from the State Nursery, mounted specimens of leaf, twig, flower, and seed of the trees and shrubs native to the State. The outstanding feature last year was an erosion model, placed on the porch, which showed in exact detail the factors governing the Mississippi flood problem.

The Division of Fish and Game also has an exhibit in this building of bird pictures, showing the percentage of insects, weed seed, and grain they eat. These illustrate the economic importance of wild life to the welfare of mankind.

WHO'S WHO ACADEMICALLY

WARREN D. BRUSH, Scientific Assistant, Branch of Research, has just rounded out a technical and scientific education in receiving the degree of Doctor of Philosophy in Economics, from the American University Graduate School, the subject of his thesis being "Utilization of Beech, Birch, and Maple in the Northeast." Mr. Brush's academic record is as follows: B. S., Baldwin-Wallace College, Berea, Ohio, 1905; A. M., University of Michigan, 1906; two-years of postgraduate work while he was laboratory instructor in botany, ecology, and wood structure, University of Michigan, 1906-8.

His lines of work have been structure, properties, and uses of wood, and he has written several reports on results of investigations of the relation of structure to properties. He is the author (or co-author) of the following Government Publications: "Greenheart" (co-author); "Quebracho Wood and Its Substitutes" (co-author); separate bulletins on utilization of elm, sycamore, black walnut, and basswood; "Marketing Black Walnut Timber;" "Economic Effects of Forest Destruction in Northern Michigan" (co-author); "Lumber Used in Manufacture, 1928" (Mr. Brush had charge of the canvass for obtaining these data from the wood-using industries of the United States).

- - - - - - - - -

On June 11, C. E. Randall, Editor in Charge, Editorial Press, and Radio, received his Master's degree in English, at George Washington University. Mr. Randall received his Bachelor's degree at Stanford University, California, in 1920. Following his graduation from Stanford, he had a teaching fellowship in botany at Oregon Agricultural College. He entered the Forest Service in 1927.

YE EDITOR DISCOVERS

There is great rejoicing among those concerned with field classification for the concessions made by the Personnel Classification Board and described in a very laconic way in Pooler's article "Classification of Field Personnel." The big book of class specifications handed down by the Personnel Classification Board a few months ago placed a few Forest Supervisors in the salary range $2600-$3100. The Board has now instructed that no Supervisors be allocated below the $3200-$3700 grade. All District Rangers are allocated in the $2000-$2500 grade, or higher - which is a trifle better than the recommendations originally submitted to the Personnel Classification Board in 1928. Very desirable adjustments have been worked out by Mr. Pooler with the Personnel Classification Board. By no means all that the Service is seeking from the Board has been secured, but there is much elation over what has been gained and a good foundation is being laid for further presentations to the Board.

- - - - - -

At Madison in May a committee composed of representatives of the various Regions, Forest Products Laboratory, and the Experiment Stations met to develop a unified program for forest fire research. Out of the discussions of this group a program was prepared which will form the basis for a development of fire research in the Branch during the next few years. As formulated this program provides for initial studies in (1) the analysis of past experience (2) fire damage (3) fundamental fire studies.

In the first grouping it was felt that an analysis of existing records would furnish the best possible basis for organizing to meet forest fire control problems by the Forest Service and other protective agencies. The studies of fire damage are to be directed [illegible] toward direct and indirect losses. The questions to be answered include the loss by forest types, the susceptibility of various species, the actual physical damage, and the indirect or intangible losses to soils, watersheds, etc.

- - - - - -

The Professional Association of the Department of Agriculture held a meeting of the Executive Council on June 9 and elected officers for the coming year. The association is a little over a year old and has been helpful on one or two pieces of legislation but has never functioned as actively as it should. Ray Marsh was elected vice president and has been informed that in future this association will be expected to give service. If the new president, Dr. C. C. Clarke of the Weather Bureau, does not find time for aggressive leadership, Mr. Marsh has been informed that he will be required to supply what is needed. Mr. Marsh's comment was "Why pick on me?"

- - - - - -

L. T. Mahurin has transferred from the Branch of Accounts to the Branch of Operation and is being inducted into the mysteries of appropriation estimates and many other things by Mr. Wold.

ANGELES TRIES NEW GUARD TRAINING METHOD

The guard meeting on the Angeles, May 5 to 8, deviated this year from the conference method of telling the guards what their jobs were and how to do them, and tried out the method of first analyzing their different positions on the blackboard, then dividing the men into groups of ten or twelve and giving them a three-day "show me" training in the lines of work each man might be called on to perform during the fire season.

The first day was devoted to the opening of the meeting with a brief discussion of the purpose in view and was followed by an analysis on the blackboard of the various jobs men are called on to do by the following classes: Lookoutmen, patrolmen, firemen and truck drivers, registrars, improvement men, and crew leaders. After listing the things that each one of these men must do in connection with his work, in the same manner we picked out those particular jobs that we felt the men needed training in, made one group of the registrars, one of the lookoutmen, etc., and proceeded for the next three days to give these men the training in those jobs that they themselves had assisted in bringing out in the analysis the first day. There was some duplication, of course, in the demonstration work, in that some of the men in each group had to be given the training that some of the other groups were getting, but the result of breaking the class up in groups of from ten to twelve men made it possible for the instructor in each group to see that each man in his group obtained all the knowledge there was to obtain about his particular job and gave the individual man an opportunity to be given special attention if he was not getting everything in the lesson.

Written criticisms of the meeting by the guards indicated that this method of field demonstration was most desirable and they asked for more of it at the next meeting.

The demonstrations included good and bad quarters, tool caches, telephone maintenance, set-up of fire camps, camp boss, crew leaders, fire boss and timekeeping.

Attending the meeting were: Deering, Jordan, and Nelson from the Regional office, Shay and Plummer from the San Bernardino, George Cecil of the Los Angeles County Conservation Association, and Los Angeles County Forester Turner. R. 5 Bulletin

THE GOOD OLD DAY

By E. N. Munns, Washington

We who live in the age of progress often forget those who hacked, cut, and hewed the first roads that lead across our eastern mountain barrier. The story of road building through the forests then and now is vastly different, and this story of danger, labor difficulties, privation, and even tragedy for the horny handed sons of toil runs through the prosaic clerical entries in the account against "the Province of Pennsylvania for charges on opening a Road for the King's Service, in Pursuance of an Application from the late General Braddock.

This road ran out from Carlisle, Pa., towards the west, and across the Alleghenies Work was first begun on May 5, 1755. The trail blazers went first, wages 2½ S. (32.6¢) per day. They were followed by the surveyors, probably the only skilled men on the job, wages 6 S. (80¢) a day. Laborers worked at the same wage as the blazers, the foremen or "overseers" receiving 3½ S. (46¢) which they used as a basis of a complaint against low wage. The teamsters received the same wage as laborers unless they drove their own horses in which case they were allowed 2 shillings (27¢) a day for each horse. A wagon, team, and driver earned 12 S. ($1.60) a day. Horses were rented from farmers, when horses could be had, at 2 S. (27¢) a horse per day and the farmer was out of luck if an Indian planted an arrow in its ribs.

After Braddock's defeat, Pennsylvania employed 70 men and 70 horses to guard the road camps, and these guardsmen received 4 S. (53¢) per day, with no compensation for injury or loss of scalp.

DECAY OF SLASH IN THE DOUGLAS FIR REGION

The extensive survey of decay conditions in different aged slashings, begun in 1928 in the fog belt and moist coast types, was extended to the Douglas fir type proper in 1929. Using the methods developed in 1928, 90 areas ranging in age from 2 to 19 years were examined in this type. The 1928 study had indicated that due to the more rapid and wetter character of decay, the more rapid shading of the slash by brush, and the relatively slight development of flashy annuals on unburned areas, susceptibility to establishment of fire would be reduced on such areas below that on burned areas in two or three years, and that difficulty of suppression would fall below that on burned areas in six to ten years. In the Douglas fir type proper, decay was generally slower than in the fog belt region. Where a considerable proportion of the decay had been of wet rot types, at least on unburned areas in the fog belt, the decay in the Douglas fir type proper was almost entirely of dry rots. The growth of brush was much slower than in the fog belt and coast types. Comparing burned and unburned slashings, it was found that, as in the fog belt, decay and brush growth were both decidedly retarded by burning. The burns, however, were generally cleaner than in the fog belt. A decidedly higher proportion of annuals which formed a flashy fuel accumulation was found on unburned areas in the Douglas fir type than in the fog belt. On the basis of results obtained in this study, it was estimated that susceptibility to the establishment of fire in the Douglas fir type proper remained higher on unburned slashings than on burned slashings for 8 or 10 years, and that in general the difficulty of suppression on unburned slashings would probably be higher indefinitely. - From "A Digest of the Report of Investigative Committee R 6 and Pacific N. W. Exp. Sta.

FOREST SERVICE
U S
DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XIV No. 26 Washington, D. C. June 30, 1930

SYNOPSIS OF THE CIVIL SERVICE RETIREMENT ACT OF MAY 29, 1930

By H. I. Loving

The Act represents a substantial liberalization in the way of retirement legislation. It is drawn in exceptionally clear and complete form, being composed of 19 sections, each dealing with more or less independent considerations. There is given below an analysis by sections defining briefly the privileges conferred:

Sec. 1 - Eligibility for Superannuation Retirement

(a) Hazardous occupations, requiring great physical effort, exposure to extreme heat or cold - automatic 62 - optional 60.

(b) Laborers, mechanics and certain jobs or services specifically designated, automatic 65 - optional 63.

(c) All classes of employees not included in (a) or (b), automatic 70 - optional 68.

15 years minimum service required for automatic retirement and 30 years for optional retirement.

Sec. 2 - Automatic Separation

After 15 years of service upon reaching automatic age for class of employment specified in Section one.

Two extensions of 2 years each permissible when advantageous to the public service.

Additional extensions authorized in very exceptional cases involving expert knowledge and special qualifications of outstanding value to the Government.

Sec. 3 - Employees to Whom Act Applies

All employees in classified Civil Service and certain groups in the unclassified service to whom benefit of the Act is extended by Executive order or legislation.

Sec. 4 - Method of Computing Annuities

(1) Tontine fund annuity - $30 for each year of service not exceeding 30 years but shall not exceed 3/4 of average annual salary (not to exceed $1200) during any five consecutive years chosen by employee.

(2) Personal credit fund annuity - in addition to (1) the annuity purchaseable with sum to employee's credit in retirement fund.

The total or combined annuity shall not be less than the highest average annual salary for five consecutive years designated by employee (not exceeding $1,600) multiplied by the number of years of service (not exceeding 30) divided by 40.

Continues for life with refund to legal representative of salary deductions (except credit in tontine fund) in excess of annuity payments prior to death.

Employee may choose an increased annuity upon waiving right of refund.

Sec. 5 - Computation of Accredited Service

Figured from date of original employment whether in classified service or not; also allows credit for military service with certain exceptions relating to pensions.

Absences aggregating more than 6 months in any calendar year are excluded from the computations.

The fractional part of a month in the total service is disregarded.

Sec. 6 - Disability Retirement

5 years service required.

Application must be filed within six months from separation from the service, except in case of employees separated prior to July 1, 1930, who are given until September 30, 1930 to file application.

Allowable (1) by reason of injury, or (2) by reason of disease when not due to vicious habits within 5 years prior to disability.

Employee need not be totally incapacitated to be retired under this section but must be unfit for service in the class of position occupied.

If disability ceases so that employee is capable of filling a position fairly comparable to that formerly occupied annuity payment will be continued while seeking another position not to exceed ninety days.

If permanently disabled by an injury in official work employee may choose either compensation under Compensation Act or annuity under Retirement Act, but may not be paid for same period under both Acts.

Sec. 7 - Involuntary Separation from Service Prior to Attaining Retirement Age

Employees so separated are entitled to certain prescribed annuity if (1) 55 years of age, (2) if served 15 years, and (3) if separation not due to delinquency or misconduct. Either a deferred annuity effective at retirement age or reduced annuity effective at once may be chosen.

Under same conditions an employee 45 years old or over, but not 55, is entitled to a deferred annuity; and on reaching age 55 may elect to receive the immediate annuity.

This section applies also to employees separated since August 20, 1920; provided that if retirement deductions have been refunded the amount must be returned with 4% interest.

Sec. 8 - Benefits Extended to Those Already Retired

Act extends full benefit to former employees retired prior to July 1, 1930.

Sec. 9 - Credit for Past Service

Employees not heretofore subject to the Retirement Act but who now or hereafter come under it may be allowed credit for past service as follows:

(a) Service up to August 1, 1920 without payments.

(b) Service subsequent to August 1, 1920 upon deposit of sum equal to deductions plus interest; payment may be made in installments.

Sec. 10 - Deductions

3½% of basic salary as at present.

Sec. 11 - Investments

Secretary of Treasury authorized to invest portion of fund not immediately required in administration of Act in interest-bearing securities.

Sec. 12 - Crediting of Amounts Deducted from Salaries

The full deductions for the period from August 1, 1920 to June 30, 1930 are credited to the individual account of each employee.

Beginning July 1, 1930 the sum of $1.00 per month is withheld from the individual's account and credited to the tontine fund.

Record of the accounts under (a) and (b) will be maintained in the Department in which employee is employed.

Provision is made for return of deductions plus interest credited to individual's account in the event of separation from the service; also of deductions credited to the tontine fund (a) when separation is involuntary and without delinquency or misconduct and (b) when employee dies before reaching retirement age.

Sec. 13 - Payment and Duration of Annuities

Annuities are payable in monthly installments on the first day of each succeeding month.

Annuities shall commence with the date following separation from the Service; with two or three exceptions specifically provided in the bill they continue during the life of the annuitant.

Sec. 14 - Credit for Time Employed in Positions not Under Retirement Act

Employees who have served in positions not under the Act preceeded and followed by service in positions within the purview of the Act, may be allowed credit for time employed in the excepted positions upon payment of an amount equivalent to the retirement deduction plus interest.

Sec. 15 - Duties of Civil Service Commission

Shall maintain a record of service by individuals; prepare and keep mortality tables; compile other data and maintain other records that may serve as a guide for future valuations and adjustments.

Sec. 16 - Duties of Board of Actuaries

Shall report annually upon operations of Act; submit recommendations as to changes deemed necessary to protect the public interest and maintain the system upon a sound financial basis; make valuations of the retirement fund at 5 year intervals.

Sec. 17 - Administration

Administration of Act is vested in the Commissioner of Pensions, under the direction of the Secretary of Interior.

Sec. 18 - Exemption from Execution

None of the moneys mentioned in Act shall be subject to assignment, attachment, garnishment, etc.

Sec. 19 - Effective Date

The Act becomes effective July 1, 1930.

The outstanding features of the Act are (1) reduction of the age limit by two years for optional retirement, (2) provides a minimum annuity of $1,200 per annum for 30 years service where the average salary for any 5 year period chosen by employee amounts to $1,600.) (3) provides for annuity because of disability after 5 years service, (4) gives former employees who failed to apply for retirement under the old act three months in which to submit applications, (5) extends retirement benefits to certain groups not heretofore included, and (6) grants the right of more than two extensions when exceptionally advantageous to the Government.

Under the new bill in the course of a few years retirement annuities will substantially exceed present rates. This is made possible more particularly by the provision in Section 4 for the "Personal Credit Fund." As an employee's personal account increases in amonut the annuity purchaseable therefrom upon retirement will increase proportionately.

* * *

JUDGING UTILIZATION OF NATIONAL FOREST RANGES

By Arthur Cramer, Absaroka

(Cont'd. from June 23 issue)

I have found it a temptation to one engaged in this type of work to introduce a multitude of refinements which cold reasoning and mathematical analysis fails to justify. Before we initiate a service-wide practice for determining utilization based on either method we should demonstrate its accuracy by a series of intensive investigations with grazed quadrats. These studies should demonstrate: (1) That height measurements of culms and leaves of 100 per cent of the plants on protected quadrats will give an accurate measure of current volume production as checked by weight of clippings from the same quadrat; (2) that length of culm and leaf measurements of 100 per cent of the plants on grazed quadrats will give relatively accurate utilization figures as checked by the weight of clippings from the same quadrats; (3) that measurements of one-hundredth of 1 per cent of the plants on the quadrat will give acceptable utilization results where (a) the plants measured are taken at random; or (b) are selected to represent the average grazed and ungrazed plants for the quadrat; (4) that the men who must apply this method can check one another, by separate work, within the desirable limits on utilization type estimates by the use of the recommended system.

In conducting a few utilization studies in connection with carrying capacity experimental work, I have used the following method: (a) Type range under study into areas of uniform degree of utilization; (b) in each utilization type, (1) measure a few grazed and ungrazed plants (recording no data) to condition the mind for a proper approach to the problem; (2) cover the entire utilization type on foot making several separate occular estimates of utilization throughout the area. In making each separate estimate just look over the forage stand and use your own best judgment in estimating the present per cent of the total forage growth that is left on the range. Average all separate estimates for the type and subtract from 100 to secure the per cent of actual utilization; (c) check your judgment of utilization on conformable grazed and ungrazed quadrats of similar density and known forage volume producing capacity, by clippings and weights. Use the clippings on these same ungrazed quadrats each season to determine the current variation in forage volume production above or below the normal. Data are compiled on the forage acre basis and correlated with actual use records to obtain current and normal forage acre requirement figures.

Mr. Hill states that not only is there apt to be a wide difference of opinion among Forest officers as to what constitutes proper utilization, but in judging actual use it is much more common for them to differ widely than to agree as closely as management needs require. I may add that I have seen a crew of five trained grazing reconnaissance men estimating utilization and almost always checking the Chief of Party within an average of 10 to 15 per cent, while grazing experts from the Washington, District, and Forest offices on the same types more commonly differed from 15 to 30 per cent because of their lack of group training. This indicates encouraging possibilities for, (a) training of Washington and District office grazing specialists by allowing them to check their judgment of utilization on a large number of comfortable grazed and ungrazed quadrats of similar density and known forage volume producing capacity, by clippings and weights; (b) formulating a brief outline of instructions for administrative officers to be used in estimating range utilization; (c) extending training system to field by Washington and District office representatives to secure more uniform and accurate utilization estimates throughout the Service.

SOME NAMES AND OTHER THINGS ABOUT THE STATES

By E. N. Munns, Washington

Alabama: first explored by LaSalle in 1684. Its name is Indian - "Here we rest."

Arkansas: Indian name of a tribe on the Arkansas River.

California: Utopia, applied by Cortez in 1542.

Connecticut: named from the Indian "Quon-ch-ta-cut, signifying "Long River." Nutmeg State.

Delaware: named after Lord De La Ware, an English statesman. First settled by the Swedes in 1638.

Florida: discovered by Ponce de Leon in 1512 on Easter Sunday. Name signifies "Flowery."

Georgia: named after George II who first established a colony there in 1732.

Illinois: from Illini meaning "Superior Men." First explored by the French in 1673. The sucker State. The inhabitants of the lead region went south in the fall and returned in the spring, as did the fish.

Indiana: named from the large number of Indian inhabitants.

Iowa: Indian for "This is the land."

Kansas: means Smoky Water, a river being of that name because of its color.

Kentucky: Indian for "At the head of the river."

Louisiana: is named after Louis XIV who once owned it. Visited by La Salle in 1584.

Maine: called so after the province of Maine in France in compliment of Queen Henrietta of England who owned it.

Maryland: was named after Henrietta Maria, Queen of Charles I of England.

Massachusetts: is Indian for "the Country around the great hills." Settled first in 1620.

Michigan: is a contraction of the Indian words meaning Great Lake.

Minnesota: means Cloudy Water, named after the river of that name when in flood.

Mississippi: is Indian for "Long River." Explored by DeSota in 1541, settled by French at Natchez in 1716.

Missouri: is "Muddy."

Nebraska: is Indian for "broad and shallow" relating to one of its rivers.

New Hampshire: is named after Hampshire County in England.

New Jersey: is named after the Island of Jersey in the English Channel. Settled by the Swedes in 1624.

New York: was so named by the Duke of York, afterwards King James II of England. Settled by the Dutch in 1614.

North Carolina: so called from Charles IX, King of France. North Carolina was first visited by a Florentine navigator in 1524, and first settlement was established at Albermarle in 1663. First settlement of South Carolina was at Port Royal in 1670, the first French Huguenot effort in 1595 failing to become established.

Ohio: after the river meaning Beautiful.

Oregon: the Indian name of its river, was visited by the Spanish in the sixteenth century and settled by the English in 1813.

Pennsylvania: Penns woods" was founded by Wm. Penn in 1682.

Rhode Island: owes its name to the Island of Rhodes in the Mediterranean.

Tennessee: means the "River of the Big Bend."

Vermont: bears the French name of her mountains, Verde Mont or Green Mountains.

Virginia: was named in honor of Queen Elizabeth, "The Virgin Queen" in whose reign Sir Walter Raleigh attempted to colonize the region. Settled at Jamestown in 1607, the first English settlement in America.

West Virginia: is the only State ever formed under the Constitution by the division of an organized State. This was in 1862.

Wisconsin: Is Indian for "Wild Rushing River." Called Badger State because the farming population went north to the copper mines during the winter, returning to farm, at the time the badgers appeared, in the spring.

YE EDITOR DISCOVERS

This year 185 took the Junior Forester Examination, the largest number ever having taken this examination. Preliminary information from the Civil Service Commission indicates that about 75 will appear on the register. There has been a very serious delay in the Junior Forester register this year because the commission has been overwhelmed by the number of examinations that have been held. As an example of the work the commission has before it, over 3,000 took the examination for various positions in the Bureau of the Census.

- - - - - - - -

Instructions regarding payment of over 7¢ per mile for the use of automobiles of employees in exceptional cases where the cost to the owner exceeds this amount have been submitted to the Department for inclusion in the Departmental regulations.

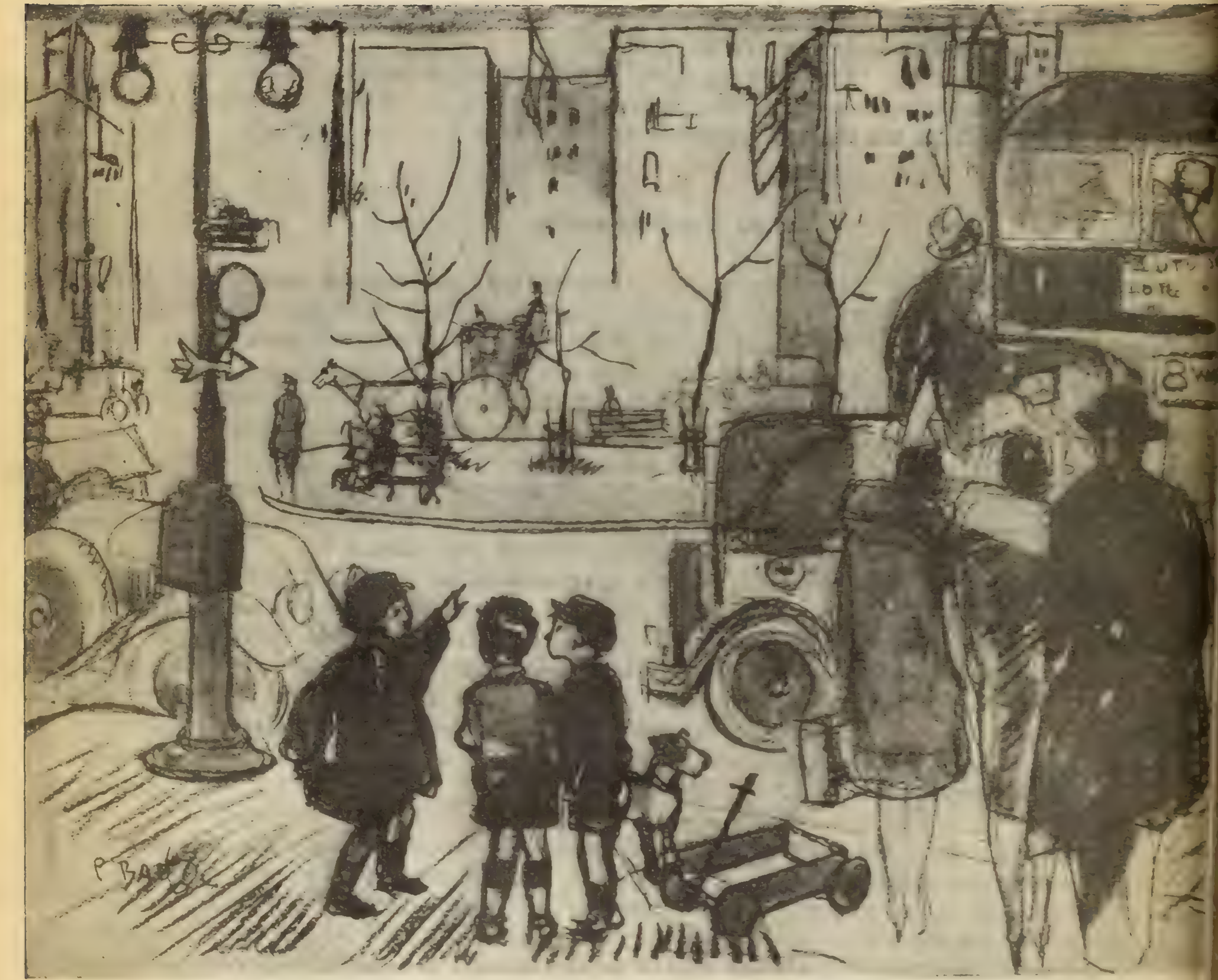
Complications have arisen owing to the introduction of a general bill sponsored by the Bureau of the Budget which would authorize a 7¢ mileage in all Departments and which would have the effect of repealing the provision for more than 7¢ in the Agricultural Act. Every effort has been made to straighten the matter out, but on account of the fact that the Bureau of the Budget is opposed to more than 7¢ per mile a delicate and uncertain condition exists. The provision for more than 7¢ in the Agricultural Act was never passed upon by the Bureau of the Budget. It was introduced by members of the committee as a result of their trip to the West last summer.

- - - - - - - -

Beginning July 1 the Great Basin Range Experiment Station becomes the Intermountain Forest and Range Experiment Station. The change in name is indicative of the change in the status of the work in the Region. Whereas formerly the investigative work carried on at the Great Basin Station has been directed toward range research entirely it now begins work also on silvicultural questions. Increases in the appropriations for the fiscal year 1931 make this possible. The headquarters for the new station has not yet been announced. Mr. Forsling, who has been head of the Great Basin, will be the Director of the new enlarged station.

REPORT ON MOTION PICTURES

A summary of reports on the twelve motion picture films which were assigned to this Region from December 16, 1929, to April 25, 1930, shows that the films were shown 172 times in 86 places to 22,523 people. - Region 4.



"C'mon, fellows, let's go over to the woods and play!"

From "Life"

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER Theodore Roosevelt

Vol. XIV No. 27 Washington, D. C. July 7, 1930

ENVIRONMENTAL CONTROLS FOR GAME THROUGH MODIFIED SILVICULTURE

Extracts From Journal of Forestry Article

By Aldo Leopold

"Forestry and game management, like agronomy and animal husbandry, deal with the coordinated production of plant and animal crops from the same land.

"In the case of agronomy and animal husbandry it is universally recognized that neither crop would return a profit to the landowner without the other. An organized process of give-and-take has been built up between the two activities. This process begins in the system of research and education in the agricultural colleges, and ends in the daily operations of the farmer. The two are one and inseparable.

"This paper is a plea for hastening the development of a similar organized process of give-and-take between forestry and game management. Measured against zero, it is clear that such a process is already under way, but measured against the need and the opportunity, it is clear that its development so far is much too slow.

"There are three reasons why foresters have a special responsibility for speeding up its growth:

"1. Game is the only land crop, aside from timber, which is best produced by the use of natural species in a natural environment, by means of a low-yield, low-cost technique. All other land crops raise artificial varieties in a manufactured environment, by means of a high-yield, high-cost technique. Game and timber yields are based, to an exceptional degree, on skill in giving slight and inexpensive guidance to natural processes. Foresters should, therefore readily understand game management.

"2. Forestry from its very inception adopted the quantitative method. Ornithology and mammalogy have only recently begun to shake off the incubus of the merely descriptive method. Many of the quantitative conceptions of forestry can be transplanted directly to the game field.

"3. The 'free timber' idea began to disappear from American conceptions of forest economics as early as the Revolution, whereas the 'free shooting' idea has barely begun to be challenged as a working basis for game production on private lands. In both fields, the fundamental present need is financial incentive for private production. Forestry has the idea of salable crops needed by game; game can furnish the additional revenue needed for forestry.

"Hence my plea that foresters contribute more actively to the development of game management.

"Let me say at the outset that the repetition of formulas like "The forest is the home of the game" is not a contribution to game management. It would be about as helpful if agronomists said: "Raise plenty of crops and your livestock will prosper." Even the layman conservationist may eventually tire of such generalizations, unless the revolving decades bring some differentiation of what we mean. We must remember that all generalizations are false, including this one. Progress in any field may be measured by the rate at which generalizations are broken down and reformulated.

"In support of these assertions, I offer four specific local problems illustrating the differentiation of the forest-game relationship."

Leopold then discusses "Quail crops from Southern Pine Cutovers." "Shape and size of plantations as affecting game crops in the Lake States." "Reproduction of browse species in Western Yellow Pine." "Game and grazing in Corn-Belt woodlots", and concludes thus --

Conclusion

"The long-asserted interdependence of game and forests becomes realistic and convincing only as it is differentiated into local and specific problems or rules of practice.

"Failure to differentiate may lead both game and forestry into costly local fallacies, and certainly deprives both of a great volume of potential public interest and support.

"In some localities the game relationship is nearly a solved problem and needs only a little additional research to become an actual means to profitable forestry over great areas. In others, the game relationship is so complex, or so nearly unknown, that impending forestry programs will have to toss up a penny. In all cases research should obviously proceed 'full steam ahead', although it is not yet doing so.

"The slow differentiation of the forest--game relationship may be due in part to the separatist policy of many foresters--their refusal to become coordinate parts of State conservation departments. I do not overlook the dangers involved in such official coordination; I merely call attention to the possibility that failure to hang together is sometimes occasion to ultimately hand separately. There is no dodging the fundamental fact that timber and game like crops and livestock, are the plant and animal products of the same land, and that through articulation in education, research, in governmental leadership, and in private practice, is the price of progress.

FORESTRY AND GAME

By Charles H. Flory, Asst. State Forester, North Carolina

Why the separation of forestry and game protection? Two closely allied activities, similar in administration, in few cases closely coordinated, in others just tolerant, but quite often widely separated and detached. The game is more or less benefited by the forest and the forest surely can not feasibly eliminate the game from its reckoning.

The lack of this proper and reasonable cooperation on the part of forestry and game organizations has led to costly mistakes, and the breach between the two will continue to widen until those directing the activities hold forth better and closer cooperation. There are of course, various aspects which present themselves that are stumbling blocks to coordination, principal of which is the failure to understand the respective problems with which each are concerned.

Foresters, generally speaking, are not by any means fully informed of game requirements. Their training is bound to create in them - if they do not already have it - a strong tie with wild life and give them a more intimate knowledge of game, but it is oftimes just a short and practical study, outside of the usual biology teachings. Furthermore, foresters lose the sportsman's side of the picture because suprisingly few of them take to the field with guns or cameras, where close observance of game habits only can be had. The forest-game relations are not only overlooked by the forester, but by the game officials as well, who too often are apt to treat the forest as an abstract thing in which game happens to live and move about.

Silvicultural and management practices have, in the past, given little thought to game. Forest plantations are established without including much needed game-food-producing trees; den and food trees are removed in thinnings or for disease control; liberation cuttings made where dense undergrowth would provide good game cover; natural refuge areas disturbed by road and trail constructions; and logging operations made over extensive areas which drive out game, especially during breeding seasons.

The forestry-game gap further remains unbridged in some instances by the lack of a thoroughly trained personnel. Activities in some States are handled by men who have only a practical knowledge of their respective jobs, to mention nothing of the higher scientific side of the other fellows job, making coordination of effort remote.

Game activities seem to be a fertile field for political "spoils". Appointments throughout an organization are made rather with a view of the employee's vote-getting ability, than his ability as a conscientious and efficient warden. On the other hand foresters quite generally have avoided politics, bringing to the front one of the major reasons for the separatist policy.

Lastly, failure to get together may be traceable to source of revenue for forestry and game. State forestery work is, in a large or small measure supported by direct State appropriations while game activities are supported by the sportsman's money. Any attempt to combine such revenues or apply from one to the other is bound to raise a howl of criticism.

Realizing the difficulties which combined game and forestry activities present, it seems unwise to proceed without proper recognition of their close relationship. Considerable research, more local in character, is needed to bring about a better conception of both problems. Combined educational work can do much to put across the "gospel" to the public, and costly duplication of effort under separate organizations might be avoided and the work carried on more efficiently and economically if they were united.

If foresters fail to recognize the importance of a game-forestry relationship they will be overlooking an opportunity vital to a higher public recognition of their own task. The interest in game manifested in the sporting element alone is today "selling" forestry, particularly fire control, in many parts of the country. The tremendous area of idle lands in the South, unable to meet its tax burden, presents a profitable venture for the dual purpose of game and trees, and where such areas can be brought under State ownership, the creation of State forests and parks can go hand in hand with the establishment of game refuges and public shooting grounds. It seems that foresters could well afford to tackle the game problem if for no other reason than furthering the cause of forestry.

A SERVICE TO CLIO

By E. H. MacDaniels, R. 6

March 10 is already ancient history, but a statement on the first page of the Service Bulletin of that date just claimed the attention of the writer.

"Eighteen years ago, or in 1911" it appears that a system of protection from fire was started in the Southern Appalachians. Among other things it included employing a local man to fight fire and to hire help for that purpose if he felt that he needed it. All very creditable, - but it is further deposed that "the fire warden idea was really orginated" along about this time and place. It is here that the Muse of History (the lady's name, I believe was Clio) squawks and grabs her eraser. A quotation from the "Report of the State Fire Warden for the year 1905", State of Washington will set things right, "The continued destruction of timber by forest fires demonstrated **** that some legislation was necessary on this subject and at the 1903 session of the Legislature a law was enacted.*** The Commissioner of Public Lands was made ex officio State Forest Fire Warden, and the county commissioners of the several counties were constituted Boards of Deputy State Forest Fire Wardens. They could appoint deputy fire wardens and prescribe their duties."

Oregon started a trifle later. It was the 1907 Legislature that passed the first forest fire law, but the list of Fire Wardens of Oregon in 1907 includes 180 names, which is a few at least.

The West, however, does not claim the credit for the idea of appointing men to fight fire and calling them fire wardens. The term and office were familiar long before 1903. Quite likely there have been fire wardens in Maine or Massachusetts ever since burning witches became so prevalent that it was considered a public menace.

The writer, as an humble admirer of Clio, feels that he has hereby rendered her some slight service.

FRENCH EXPLORATION IN FLORIDA

By E. N. Munns, Washington

Jean Ribault was born about 1520 in Dieppe. At 30 he was a renouned leader, a diplomat, a sailor, a French patriot and Huguenot. In 1562 Admiral de Coligny chose Ribault to lead an expedition to Florida, to establish in the new country a Protestant colony. He wrote "The Tree Discourie of Terra Florida" published in England 1563. This contains much of interest, including the following:

"Thursday the last of Aprill at the breke of the daye we discovered and clearly preceaved a faire cost of a gret lenght, covered with an infenite rumber of highe and fayre trees."

The next day after visiting the Indians along the Maye River (now the St. John), "we veued the cuntry thereabowte, which is the fairest, fruitifullest and plesantest of all the worlde, habonding in honney, veneson, wildfoule, forrestes, woodes of all sortes, palme trees, cipers, cedars, bayes, the hiest, greatest and fairest vynes in all the wourld."

Describing the Indians Ribault says: "There spades and mattocks be of wood, so well and fyttley made as ys possible, which they make with certen stones, oister shelles and mustelles wherewith they make also the bowes and smale lances, and cutt and polishe all sortes of woods that they employs about there buildinges and necessarye use. There growith many walnuttress hazeltrees and small cherytrees very faire and great."

In the next three weeks Ribault explored the coast of South Carolina. He noted seven rivers on his northward journey and tells:

"There be every where the highest fayrerst and greatest ffirr trees that can be sene, verry well smelling and whereowt myght be gotten with cutting only the bark, as muche resin, turpentyne and frankinsence as men would have." One wonders whether he had not seen Indian turpentine operations whereby they obtained pitch for their baskets, etc.

YE EDITOR DISCOVERS

Material sent in for use with the promotion recommendations shows a number of interesting things. The total payroll of the Service was increased $245,150 between June 30, 1920, and June 30, 1930. Of this, $210,700 is accounted for by new positions created during the year because of new or increased volume of work and financed from new appropriations. The record shows that $32,660 of new positions necessary for new work or increased volume of work were financed during the year with savings arising from betterments in organization or management, with a few instances of forced curtailment of expenditures to meet urgent needs which could not be financed otherwise.

Salary increases within the grade during the year amounted to $100,930, and the net increase on account of reallocation amounted to $13,500. But these are offset by a decrease of $91,320 in positions dropped during the year as a result of betterments in organization or management. The decrease in payroll during the year on account of filling vacancies at entrance salary, where the employee resigning received more than the entrance rate, amounts to $12,500.

- - - - - - - - -

Beginning July 1 the region served by the Lake States Forest Experiment Station is being expanded to include North Dakota and the eastern three-fourths of South Dakota. The reason for this shift is that the forests of the North Dakota Sand Hills are extensions of the fringe forest of western Minnesota. The problems which exist there are the same as those in the prairie region of the latter State. Some scouting work has already been done by the Director of the Lake States Forest Experiment Station to determine the various problems of the region. During the coming year some preliminary investigations will be made of the erosion problems in the Bad Lands section.

- - - - - - - - -

The work on the North American Forest Bibliography has disclosed some 40,000 titles in North American forestry literature. These titles are now being sorted according to sub-divisions and the cards in different subject categories will be sent for checking purposes to a number of those specialists interested in the bibliography. About six months were required for transcribing the cards and in searching the literature for added references. The size of the task will result in materially extending the time required.

As a corollary of this work a bibliography covering present published bibliographies has been prepared. Nearly 400 of these are in existence scattered in various publications. This bibliography is being duplicated for checking, as one means of catching additional titles. It probably will become a part of the main forestry bibliography.

ANCIENT FOREST LAWS

John Evelyn, in his "Silva, or a Discourse of Forest Trees," published in London in 1664, lists several laws enacted for the preservation of forests. "If any one set Fire of a Wood, he shall be punished, and besides pay three Pounds; and for those who clandestinely cut Wood (of which the very Sound of the Ax shall be sufficient Conviction) for every Tree he shall be mulcted thirty Shillings. A Tree so fell'd, under whose Shadow thirty Hogs can stand, shall be mulcted at three Pounds."

Evelyn mentions an "inviolable Custom about Frankfort, where the young Farmer must produce a Certificate of his having set a Number of Walnut-Trees, before he have leave to marry." - Pa. Forest News.

EQUIPMENT FOR FIRE LINE CONSTRUCTION

A number of devices helpful in fire control have been tried the past year. A small 2-cylinder, 2-cycle caterpillar tractor, which is manufactured for light cultivation or plowing and weighs only 760 pounds, was used to excellent advantage in actual suppression and promises to be a useful machine for certain types of country.

A light knockdown 3-wheel plow which can be used as a trailer behind a car, or with one horse, or with man power, gave good results in pine country. Experiments with power equipment for boring snags were continued. The direct connected power unit is found to have some disadvantages and attention is being directed instead to electric generators. A new Westinghouse generator weighing 110 pounds, which can be separated into two units, is now being assembled. It is expected that this will operate two drills on short leads or one drill on a long lead.

As regards lights for night work, a new Barney & Berry electric headlight was tried out and proved so satisfactory that it is recommended as superior to all other types that have been tried for night travel and night work on fire lines. - From "A Digest of Report of Investigative Committee R. 6 and Pacific N. W. For. Exp. Sta."

SWEDEN HAS PERMANENT TIMBER SUPPLY

Sweden recently completed a National Forest Survey after seven years of work and at an expense of about $400,000. Although final statistics are not yet available, the preliminary figures show that at the present rate of cutting, Sweden's timber supply is permanent. This is all the more important to the country since the value of Sweden's export of lumber and other forest products is more than half of all other exports combined.

The survey was conducted with the aid of the Swedish Forestry College. About ten billion trees were recorded by the various gangs headed by a forester. The survey included the woodlands from the extreme south to the Lapland Mountains north of the Artic Circle.

The surveyors were heartily received and their visits helped to strengthen the public mind in the importance of the Swedish forests in the nation's economic life. During the seven years, a total distance of more than the circumference of the earth was covered.

The preliminary figures show that the annual growth amounts to approximately 1½ million cubic feet. The entire supply of the standing timber is approximately 52 billion cubic feet.

The head of the survey committee is Prof. Henrik Hesselman, one of Sweden's foremost forestry experts. - Pa. Forest News.

"A VARIOUS LANGUAGE"

"Sensitiveness to nature is not a trivial trait. It touches the depths of personality and tends to make a living unity of science, the sense of beauty, and religion. In the silence of the forest, in the peace of starlit night, in the quiet of woodland waters, the sensitive spirit feels awe, reverence, aspiration--escapes the tyranny of the immediate, yet without concession to creed.

Trembling shadows on quiet waters, the first glow of the dawn, numberless hints of aesthetic design in the infinite variety of natural forms, touch the sense of beauty. The process of life, every phenomenon of matter, spur one's mind to understand the world. And all these experiences tend to integrate the human spirit.

Libraries hold no more precious volumes than those which preserve the insight and ininspiration of men who became great in communion with nature. Happy is he who can vitalize those treasures of literature with the reality of his own experience!"

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XIV No. 28 Washington, D. C. July 14, 1930

SOME MORE ABOUT UTILIZATION

By Fred Stell - Cochetopa

My entrance into the discussion on "Judging Utilization of National Forest Ranges" is not with the idea of starting or carrying on an argument but rather to present the problem as I see it.

To begin with, the starting point of range management is to secure the best distribution of the stock practicable. Without proper distribution there can be no great value secured from utilization figures. One cannot take a range unit that is grubbed out on one side and under utilized on the other and get any correct idea of the percentage of utilization over the whole. It is essential to know the percentage of utilization on overgrazed areas but one cannot tie this in with actual use figures unless the ranges is fairly evenly grazed.

The first step then is to get distribution. After that comes the problem of determining the percentage of utilization. I believe this can best be secured by using a system such as the Great Basin Experiment Station men use in determining utilization on some of their pastures. This system was adopted on the Montezuma National Forest in 1928 and has been in use since that date. Following is given a form upon which the data are entered:

A Important Forage Species	B No. of Plants Grazed	C No. of Plants not Grazed	D Percent of Plants Grazed	E Average Height of Plants Grazed	F Average Height of Plants not Grazed	G Percentage of Cropping	H Percentage of Utilization (D X G)
Arizona Fescue	90	10	90	7	14	50	45
Wheat Grass	40	10	80	4	16	75	60
Brome Grass	90	0	100	12	24	50	50

The number of plants that have been grazed and the number that have not been grazed for each of the principal forage plants on a small area are counted and measured. Measurements are taken of average height not extreme height. By average height is meant the point on the plant where, if the top were clipped off, the portion above that point would fill in the plant below that point so that the plant would have the same volume from the ground up. An ungrazed plant of mountain bunch grass might have an extreme height of 20 inches but by clipping off 5 inches so as to have the same volume from the ground up, the average height would be 15 inches. The same method is followed for measuring cropped plants. If one side of a specimen is eaten out, a little more of the top is taken to fill in the volume that has been eaten. I believe this method takes care of the problem of determining how much volume has been grazed.

It is not intended that this method be used a great number of times by the person inspecting the range, for to do so would involve too great a loss of time. It is intended chiefly to train the eye in judging utilization just the same as the Biltmore stick is used to train the eye to judge diameters of trees when cruising timber. It is well for the person inspecting the range to make a test in each principal type since the appearance of types vary. I have tried this method out and have found that it is a great aid in making estimates of percentage of utilization.

After the percentage of utilization is secured, the question of what constitutes proper utilization comes up. As a starting point I believe the percentage of palatability of each plant species may be taken as the proper percentage of utilization. It is necessary to start at some point and until better data are available, I believe this is a satisfactory starting point. As time goes on this percentage could be varied just the same as palatability figures have been varied in different localities, so that after a time the proper percentage of utilization for each important forage species could be determined. The studies that have been made at the Great Basin Experiment Station on various degrees of clipping would furnish valuable data on the species that they have studied.

The variation of growth in different years must also be considered. I do not favor the idea of tying to the average year. In the first place we do not know exactly what the average year is unless studies have been made to determine it. In the second place if the variation is as great as that cited by Standing, a range would be severly overgrazed during a poor year if the average were used. I am inclined to be more conservative and set the point at the place where the range will not be seriously injured during the poorest year In some cases this probably would be the average year but where there is a great difference in amount of forage grown as happens on many ranges. the average year would not be safe to tie to.

On practically all of our mountain ranges there are what I call "key points", or areas where the forage is more heavily utilized than on others regardless of all practical measures to keep the stock properly distributed. These are more pronounced on cattle range than on sheep range and usually consists of parks or stream bottoms. If these areas constitute a large enough percentage of the whole range to warrant their protection, they may be taken as the points where utilization may be judged. After we have done all in our power to get the best of distribution we are then concerned chiefly with the areas where damage is most likely to occur and can pass up the less heavily grazed areas.

A record of utilization is in turn worthless for future reference without a record of actual use in animal months. This is not at all times possible to get accurately but the inspector should do his best to secure as reliable data as possible. On some areas this may be secured very accurately while on others it is largely a matter of guesswork.

In conclusion I would say that utilization is a very important block in the structure of range management but there are foundation blocks that must be used before utilization is brought into play; that some elementary system such as I have outlined for determining utilization is next in order; and that from this point a more complex system such as Hill has outlined can be adopted when data are available to show what the maximum utilization in percentage should be for each of the principal forage species.

A CASE OF VANITY

By Charles Allen, Wichita

Vanity was rampant on the Wichita that morning. Now a little of it may or may not be such a bad thing. It's open for decision. And yet some declare: "Necessary to progress." That, "if you don't think you're some pumpkins who else will?"

Wild turkey gobblers have it all over the rest of creation when it comes to this vanity business. But where do they get with it? Well, let's say where would they get without it?

A couple of tourists stopped in to see the sights that morning. A bunch of wild turkey gobblers and hens were feeding near the office. Just some turkeys gobbling up their breakfast.

"And those are wild turkeys, eh," a man remarked, with little show of interest.

"Yeh, wild turks," another voiced, with barely a glance at the big birds. Attention was turned to a couple of deer daintily partaking of some kaffir corn.

"Now those are what I call beautiful creatures," was remarked with keen interest.

The deer gracefully raised their heads from feasting, pricked up ears and looked at their visitors with big, round, inquiring eyes. Yet their muscles were tense as finely tempered steel, as if ready to be off at a bound, with one more move from those men creatures.

"Nervous animals," one noted.

"They sure are, Always on the alert. Guess they have to be. Lives generally in danger and dependent on quick action."

"Yeh I guess so," the other returned, then added: "Wonder what else they've got 'round here that's interesting?"

"Guess there's some mounted specimens inside," came the reply, and they turned towards the office.

At this point some of the wild turkeys arched their necks, cast knowing, squinty glances at the visitors and confided among themselves. "Never mind," one intimated, "they'll be back. Soon as we get this kaffir corn cleaned up the big parade goes on and then we'll see how much attention friend deer gets."

Inside the office one tourist immediately picked out an object of unusual interest. "Take a look at this George," he said to his companion, then read to him from a card: "'Black Dog, born 1907, died 1919. Killed in combat. Declared largest buffalo bull ever raised on the Wichita Forest. 2800 pounds.'"

"A wopper wasn't he," the other said, looking with intense interest at a huge buffalo skull fastened to the wall. "Didn't know they ever got that big."

"And killed in combat. Say George, I'd like to have been in on that fight. Maybe the fur didn't fly when the fierce, grunting, lunging critters smashed together. What?"

"I'll say so."

Curiosity satisfied there and another look around. "Not a bad looking mount, that buffalo head over the files."

"Yeh must have been about 2 years old."

"Wicked looking set of teeth in that open coyote's mouth. And if there isn't a monkey face owl. Funny looking bird."

"Yes, and there's a pretty good sized hawk, and a fine set of elk antlers."

"Guess that's all in here, lets go out."

The two deer had returned to protection of oak forest close by and stood nervously looking on from its border.

"Deer still with us," a sightseer observed.

"Yes George, but look here. What do you know about that?"

Wild turkeys in the foreground. Gobblers strutting. Hens standing still, content to admire their lords and masters.

"Funny, we passed 'em up while ago, and here they are clamoring for attention."

"Guess they're getting it too. See that old boy parade. Talk about vanity. Did you ever see the beat of it?"

"They'd never got another look or word if they hadn't put on this show. We'll have to hand it to 'em."

"That's right, and now that the sun's crawled out of that cloud bank, there's some fine tints to feast your eyes on."

"Tints is putting it pretty mild," the other raved. Most gorgeous colors in all creation to my notion. There's copper, bronze, gold, green, brown, gray, and, and- " he broke off then took a new start: "All dressed up for the show. And don't they know they're it. See those squinty, disdainful glances in our direction."

"Kinda hard to break away from, ain't they? But lets be goin'"

"Just a minute till I get my kodak, I want a picture of that parade."

EARLY DAY FIRES

(Extracts from Old Reports of California State Board of Forestry)

Examples of Forest Destruction

The Southern Pacific Railroad was built into the City of Los Angeles through the Soledad Canyon. Until 1883, no serious damage was ever done this road by floods in that location. But about two years before this time certain parties, having stock pastured on the mountains forming the watershed of this canyon, commenced deliberately to set fires in the brush and forests on these watersheds, the idea being to improve the pastures and keep the trails open.

There are some fifty or seventy head of horses pastured through this extensive district. These fires destroyed the water-holding capacity of the mountains. As a result, the heavy Winter rains of 1884 washed out the entire railroad, roadway, bridges, and all. Travel and business were delayed over six weeks. The railroad repaired the damages done, and the next year being very dry, no injury happened; but the year following, on an ordinary rainfall, measuring less than many of those that had previously done no damage, the railroad again sustained heavy losses.

It is probably no exaggeration to say that it would have been cheap and good business for the railroad company to have paid Jack Talbot and his friend Texas $5,000,000 to have kept away from the watershed of the Soledad Canyon.

* * * * * * * *

Mr. Arturo Bandini, whose family have long resided in Southern California, tells me that his relatives and their vaqueros, or herders, say that in their experience the perennial character of many streams and springs has been destroyed and the pasture injured by the extensive cutting of oak and other trees and the burning of the brush on the mountains.

* * * * * * *

Hon. Brice Grimes, of Ventura, informs me that within the last four or five years the Santa Clara River and those of its tributaries whose sources have been stripped of timber and brush, now run more violently and destructively than formerly. As a consequence the Santa

Clara Valley is being much injured by floods. Estimates from individuals on different parts of this river show that between one thousand and five thousand acres of good land have been cut away by changes in the channel of streams, or covered with debris, so as to be entirely worthless.

Mr. John E. Jackson, for many years County Surveyor of Los Angeles, and at present Land Valuer of the Southern Pacific Railroad Company for the southern counties, has given me the result of his observation of what has taken place here within his experience. He says that there is not a single important watershed in this section that has not been more or less devastated by fire. Equally, that there is not an important watercourse in the section that has not, within his personal knowledge, materially changed in character. Every one of our watercourses, Mr. Jackson says, is now bringing down more sand, bowlders, and debris than was formerly the case. The same rainfall now creates more rapid and destructive floods than it did before the waste of the mountain verdure

* * * * * * * *

In addition to the forest trees, mention should be made of the chaparral, chemisal, and manzanita, that cover nearly all open country between five hundred and three thousand feet elevation, the latter reaching an altitude of over eight thousand feet, and there being a low shrub.

* * * * * * * *

San Diego County

At least one third of the land covered with brush, grass and oak timber in the southern part of this county has been burnt off by settlers within the past eighteen months, doing a great deal of damage, not only as regards pasturage, timber, and bees, but also decreasing the reservoirs of water, which the absence of brush will affect, to a certain extent, the same as timber. These fires are caused by careless settlers, who at the time only intend to burn a few acres of brush, but everything being very dry at the time, the fire soon gets out of their control and the result is the fire takes everything before it. I have seen these fires spread five miles square in a few days.

* * * * * * * *

I have not yet at hand the information upon which to base an estimate of the loss to this State by forest fires during last year, but in the preceding year, 1890, the estimated direct loss to California from this source approximated $15,000,000, and this does not include in any way the direct loss in damage to the watercourses, and consequently to the valleys and plains, by the destruction of these forests.

* * * * * * * *

Yosemite National Park

Usually there are forest fires in all directions in September and October, and the air is so filled with smoke that nothing can be seen from the mountain tops. The Washburn Brothers, who have kept the hotel at Wawona for years, testify that heretofore a pall of smoke has hung over their place in the fall, obscuring the sky, hiding the mountains, and at night settling down into the valley and making it difficult to breathe. Two years ago they had to fight fire for two weeks, and it was with difficulty that all the men who could be collected saved the Mariposa grove of Sequoias from a scorching that would have destroyed half the trees. The course of that fire can be traced through the forest by blackened skeletons of trees, fallen and standing, and the absence of any growth of saplings. In fact, the forests all through these mountains bear the ugly scars of fires that have swept through them year after year.

And yet there are some men who deny the sheepherders are responsible for the destruction of timber in the Sierra. One old resident has invented an original theory to account for forest fires. He attributes the most of the fires to spontaneous combustion, and what is more, he has seen the forests spontaneously combust. He avers that he has seen the top of a sugar pine burst into flames in the middle of the day, and he has seen fires start on the top of Cathedral Rocks, where the foot of man never trod. His theory is that globules of pitch concentrate the rays of the sun, just as a burning-glass does, and set fire to themselves. But there has been no spontaneous combustion in the Yosemite Park since 1890, and I am inclined to regard the absence of sheepherders and the nonoccurrence of forest fires as something more than an accidental coincidence.

The damage done to the great forests of the high Sierra cannot be appreciated nor understood until one has traveled through them, along the lines followed by the sheep.

The desolation of the country is intensified by the absence of animal life; but more serious than the destruction of the game is the irreparable injury to the forests on the watersheds of the large streams that are fed by the snows in the high Sierra. The timber is mainly fir and tamarack, interspersed with black and yellow pines. The pines resist the action of fire to some degree, although not so well as the Sequoias, but the fir that is once scorched at the base is doomed, and the thin-barked tamarack is not more hardy.

To the casual observer the fir forests seem to be in fairly good condition, but a glance at the tops of the trees that might be supposed to be sound will tell a story of internal decay. When one's attention has been directed to the fact, he will see that the finest looking trees are dead at the tops and at the ends of the larger limbs, and that nine tenths of the large trees are in that condition.

Thomas Agnew, a miner, who has lived for many years on the headwaters of the San Joaquin, has noted with care and intelligent interest the effects of fire upon forest trees, and he has noticed that a scorched fir becomes a hollow shell, while apparently sound and retaining most of its foliage, and will fall in about ten or twelve years.

The vast number of fallen firs in the forests on the headwaters of the San Joaquin corroborates Agnew's statement. Wherever the fires have been frequent the fir forest is ruined.

Three years ago last October, when Thomas Agnew came down out of the mountains, he counted ninety-two fires on the watershed of the San Joaquin between his place and Jackass Meadows. The sheep had gone out just ahead of him. Last year there were no sheep in that part of the country, and there was not a single fire. - Submitted by L. A. Barrett, R. 5.

Hordes of gullies now remind us
We should build our lands to stay,
And departing leave behind us
Fields that have not washed away;
When our boys assume the mortgage
On the land that's had our toil,
They'll not have to ask the question,
Here's the farm, but where's the soil?

J. J. M. + Longfellow.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XIV No. 29 Washington, D. C. July 21, 1930

WILL C. BARNES LEAVES GOVERNMENT SERVICE

By C. E. Rachford, Washington

One man's eulogy of another is of small consequence in comparison with a spontaneous outburst of commendation by a large number of his co-workers. When this occurs both the individual himself and his services are more fully appreciated and recognized. Such an expression was given Will C. Barnes on his 72nd birthday.

About sixty-five of his friends in the Washington office met at an informal luncheon at the Annapolis Hotel on June 21, after which the Forester presented Mr. Barnes with a book handsomely bound in leather containing 230 letters from men and women of every rank in the Forest Service. These letters expressed in various forms an appreciation of Mr. Barnes' devotion to the ideals of the Forest Service, his accomplishments, and the enduring friendships he has made for himself and the Service. They exemplified originality, expressing the writers' sentiments in prose and poetry.

In addition to the book Mr. Barnes received a cowboy's "coat-of-arms," artistically drawn by Miss Mehurin of the Office of Drafting. As a memento of the part she has played in the career of her distinguished husband and the affection of members of the Forest Service, Mrs. Barnes was presented with an orchid corsage.

After 21 years in the Government Service Mr. Barnes retires on July 1 to private life, travel, and literary work. The best wishes of all go with Mr. and Mrs. Barnes wherever they may be.

THANK YOU ONE AND ALL

For Mrs. Barnes and myself I thank all our kind friends in the Service for the many expressions of good will and friendship that came to us on my last birthday. That beautiful volume of letters written from every nook and corner of the country was a happy thought.

It was indeed a happy birthday celebration for me. Such appreciative words make us feel more than ever the privilege that has been ours in being attached to such an organization; a family of friends and fellow workers bound together by ties of esteem and friendship unequalled in any other government bureau.

I find my eyes filling with tears as I realize that perhaps never again shall I "meet up" with some of the writers—both male and female- scattered as they are all over this broad land of ours. I recall the many happy days in the forests, long hard rides over rough lonely trails-often on equally rough horses-; the camps in storm and snow; in rain and sunshine, the never-to-be-forgotten hours around the evening camp fires.

You may all be assured that these letters will be taken with us wherever we roam, to be read and re-read, with growing appreciation of their kindly and loving expressions.

Mrs Barens doesn't understand why she should have been remembered as it was not her birthday, nor has she reached the retiring age. But she felt like a million dollars when she pinned on that bunch of Orchids handed to her.

Again we thank you all. We shall never forget a single one of you.

WILL C. BARNES.

THE 1930 SPRING FIRE SEASON IN THE SOUTHEASTERN STATES

By C. F. Evans, District Inspector, Southeastern States

In the history of forest fire protection in the Appalachian Region the year 1930 will have the same significant place as the year 1919 has in the Northwest. In both cases the available means for meeting unusual conditions were known in advance to be inadequate. Relatively, fire control work is probably not as well financed in the Appalachian Mountains now as it was in the Northwest in 1919. The revised (1929) estimates of the cost of adequate protection for State and privately owned lands in the mountain region set the average annual cost at 3½ cents an acre. For the Fiscal Year 1930 there was available from all sources, Federal State, County and private, less than 1 cent an acre for most of this region. For a large part of the mountain country in Virginia and North Carolina the available funds amounted to about ½ cent an acre. These figures refer only to counties or other units organized for protection. Large areas are entirely unprotected.

The spring months were unusually dry. A few quotations from the monthly summaries of the Weather Bureau for April will indicate the degree of deficiency in precipitation. North Carolina: "1½ inches below normal and the least of record in 15 years. This was the fifth month with less than normal precipitation - - - The deficiency averaged 2 inches in the western (Appalachian Mountains) district." West Virginia: "The departure from normal for 53 stations having ten or more years record was--1.57 inches." Tennessee: "The monthly average for the State, 76 stations reporting, was 1.66 inches or 2.82 inches less than normal."

Virginia and West Virginia have had this spring the worst fire season in the history of organized forest fire protection in these States. In North Carolina the 1930 spring fire season is considered one of the worst two in the experience of the State Forestry Department, 1926 being the other. The fire season was of long duration and was marked by two extremely hazardous periods--April 10-13 and May 1-5. During these periods the relative humidity was low, a minimum of 18 being recorded at Lynchburg, Virginia, and high winds were common. It is estimated that the area burned over between January 1 and May 31 in the 58 organized counties in Virginia was 150,000 acres. This would be approximately 1-3/4 per cent of the protected area. No data are available at this time on the losses on unprotected areas but the total is large. The losses since January 1 in the organized counties in the western district of North Carolina amount to nearly 2½ per cent of the total area protected. These losses are serious, particularly because of the fact that in the northern part of the region the fires which burned during the two critical periods, in many cases, killed all the timber on the areas burned. I saw a 13,000-acre burn in Alleghany County, Virginia, and a 10,000-acre burn in Bland County, where every tree and shrub was killed except where the fires traveled against the wind. These fires spread rapidly and were impossible to stop with the available forces. During the time that the Bland County fire (on Hunting Camp Creek) made its run, charred leaves and bark fell 10 miles ahead of the fire.

When it is considered that the set-up of funds provided only a skeleton organization with barely enough equipment to match--inadequate even for a normal season--it must be admitted that the State organizations did well to hold the losses as low as they did. It was pretty conclusively demonstrated, I believe, that a skeleton organization can not be expanded suddenly to a large size to meet such emergencies as prevailed April 10-13 and May 1-5 without the situation getting out of hand, and that is precisely what happened. Of course most of the men did not need this demonstration. They could have foretold the result. They were not unprepared by choice. There is a disposition on the part of the district foresters and the chief wardens, as well, to analyze all the large fires. This is most commendable. I participated in several of these "post mortems" and they were most enlightening.

The spring fire season in the coastal plain region of the far South has also been difficult. I saw several large fires in Florida on June 1. Normally the danger should be past, or practically so, on April 15. In spite of the long winter and spring fire season the intensively protected areas in Alabama, Georgia, and Florida came through with fairly good records. The burned areas on the protected units in Florida amounted to about 4 per cent of the 1,100,000 acres under protection. The losses were even less on the protected areas in Georgia. The unprotected lands in all the coastal plains region were badly burned.

There is no doubt that the experience of the past spring has done much to convince the public that more support is needed for the State Departments before they will be able to hold losses down to a satisfactory figure. Whether the necessary financial support will be forthcoming in the near future is another matter. The economic depression throughout the region is forcing efforts toward retrenchment in public expenditures and it will be difficult, in the face of this situation, to secure increased appropriations from the States and Counties.

TAKING A BACK SIGHT

By Walter J. Perry, Deschutes

Thirteen years now and our yellow pines have made almost no growth because of drouth, while thousands of fine saplings have perished purely through lack of moisture or succumbed to insect attacks invited by their weakened powers of resistance, while millions of seedlings gave up the ghost in their first year. We say: "O, it will start raining some time." Probably so. And, "These things run in cycles." Ye-ah? What's a cycle? Let's turn over a tree and read a chapter from the stump.

This stump is a composite of five. It is 347 years old. Looking first at the illustrations, so to speak, we see that the tree made wonderful growth in its youth. At 35 years it had reached 16" d.i.b., and 20" when it was 55. You will look in vain for any such growth in timber under 250 years old on comparable sites today. But then the growth suddenly almost stops! Find the elephant in the picture. Clearly the tree had plenty of moisture up to that time. There was fire that year (a small burned off and overgrown stub), but the tree took little damage as even the lower crown was not killed. Drouth, then, 18 dusty crackling years of it, from 1624 to 1642. Following this record-breaking drouth (only there were no records) came 44 good years, after which time, 244 years ago, there have been no such favorable seasons and the growth for that period has never been closely approached. So much for the "ancient history" of the tree. You may, if you like, try to visualize a time, 2½ - 3 centuries ago, when the present "dry lakes" scattered over central Oregon to the east and south were all green bordered, shimmering bodies of water, and winds from that quarter carried moisture instead of dust clouds as at present. There is plenty of corroborative evidence to be found if you feel the need of it.

Let us see what happened recently. We start at the bark and check back to this narrow band of annual rings - date 1746, 184 years ago. During this time there have been six periods of drouth ranging from 8 to 13 years in duration - average 10 years. The time of suppressed growth is 33 per cent of the whole, and growth during these periods is approximately 25 per cent of normal.

How about periodicity? The stump gives us the following data:

Date	1917	1900	1882	1849	1836	1819	1810	1791	1783	1756	1746
	1930	1916	1889	1881	1848	1849	1818	1809	1790	1782	1755
Dry Yrs.	13		8		13		9		8		9
Wet "		17		33		30		19		26	

The record shows the present dry period the longest suffered since 1848, or 82 years. It also shows that it has already equalled in duration any that has occurred in 347 years except the great 18-year drouth of 1624 - 42.

By the law of average (if any) the dry spell is due to come to a close pronto — and it looks like rain right now!

O, well then, you make a guess!

THREE IMPORTANT TIMBER SALES

By E. E. Carter, Washington

Late June and early July brought the opening of bids on three important timber sales in Regions 2 and 3. The most surprising results developed in connection with the offering of about two million cords of pulpwood in two units on the Rio Grande and San Juan Forests, respectively, advertised at $1 per cord for the timber on the Rio Grande and 75 cents per cord for that on the San Juan. The advertisement had stated that the agreement to take all or specified quantities of the sawtimber of the pines and Douglas fir (non-pulpwood species) might be considered in making the awards but otherwise the taking of these non-pulp species would be optional.

Three bids from responsible, established eastern paper manufacturers for the timber on both units and one bid from a Colorado lumber manufacturing company for only the San Juan unit were received. The lumber company was the low bidder for the San Juan unit. The high bidder was the Trans-Mississippi Development Company, a new subsidiary of the International Paper Company of New York, which bid $3.03 per cord for the pulpwood on the Rio Grande Unit and $1.77 per cord for that on the San Juan Unit. This company agreed to take 40,000 M feet of the non-pulp species on the Rio Grande Unit at $3.50 per M and 50,000 M feet of these species on the San Juan Unit at $2.50 per M feet. On the basis of the estimated amounts to be cut and this agreement to take specified quantities of the optional species, the bid of this company was 2.95 times the value of the estimated cut of pulpwood at the advertised rates. The other pulp companies bid rates which made the total values of their offers 2.0 and 2.5 times the minimum offer which the advertisement stated would be considered.

If this sale results in the establishment of a market for pulpwood of Englemann and blue spruce and white and alpine fir in the Rocky Mountain region, a long step will have been taken not only in the marketing of National Forest products but also in the ability of forest managers to practice good silviculture in the region.

On June 17 Region 3 opened bids for the timber on the Rock Top Unit on the Coconino Forest, estimated cut to be about 100,000 M feet of western yellow pine. The timber was advertised at $2.50 per M. Three bids were submitted, of which the highest was $3.86 per M made by the Cady Lumber Corporation. One of the unsuccessful bidders, the Arizona Lumber and Timber Company, has filed an appeal from the decision of the Regional Forester to award the timber to the Cady Lumber Company and has been given until July 28 in which to submit data in support of its allegations.

On July 2 Region 3 also opened bids for the timber on Unit 6 in the Jemez Division of the Santa Fe National Forest, estimated to cut about 208,000 M feet, approximately 65 per cent western yellow pine. But one bid was submitted in this case, and that by the Whit Pine Lumber Company of Bernalillo, New Mexico, which offered the advertised rates of $2 per M for western yellow pine. Douglas fir, and limber pine, and $1 per M for spruce and true firs.

MORE FORESTS AND MORE FIRES

By Ress Philips, R. 2

For many years I have searched for and read with interest the meager reports on forest conditions in Siberia. From these reports I got the idea that there are immense areas of forest lands in Siberia but no one knows much about them. In this connection, Dr. Eckner's description of his flight across Siberia was of special interest to me, as it will, no doubt, be to all foresters. Many of the field men will read the report and see the wonderful pictures in the June number of the National Geographic magazine, but for the benefit of those who will not see the magazine I want to quote briefly as follows:

"On the Siberian side of the mountains (Urals) we saw dozens of tremendous forest fires, the dense smoke of which covered a vast area of many hundred square miles and hid the earth from the airship.

"We were obliged to pass through layers of smoke, which drifted from south to north at a distance of from 40 to 50 miles, until it was clear enough for us to be able to see fairly distinctly below, but for many miles the view was very indistinct and the smell of fires continued for hours.

"After passing this zone we turned toward the northeast, over a bend of the River Ob, where, after describing an easterly course, it flows in a northerly direction. We soon arrived at the taiga country, a region of widespread swamps which lie on both sides of the Ob.

"° ° ° The whole region gave the impression of a dreadful waste, uninhabitable for man or beast, where there were not even waterfowl.

" ° ° ° We flew over that dread waste the whole night, from seven in the evening until nine o'clock next morning. Never before, perhaps, had anyone viewed those territories, at least not to such an extent. Now and then, perhaps bold trappers have crossed these regions during the brief summer, when the land is free from the snow of a long, hard winter."

Evidently the protection problem of the Siberian forests is not confined to man-caused fires. - R. 2. Bulletin

PASADENA JUNIOR CHAMBER OF COMMERCE AGAIN TO THE FORE

Working on the theory that the best way to educate people is to show them, the Junior Chamber of Commerce of Pasadena, under the auspices of the fire prevention committee, sponsored a 100-mile educational tour into the extreme back country of the Angeles Forest on Saturday, June 7. The party consisted of 124 persons, including officials, reporters, photographers, prominent citizens, service club representatives, and others, traveling in 44 automobiles.

The purpose of the tour was to give an opportunity to representative officials and citizens to secure first-hand information on the physical resources of the Forest, its relation to water conservation, flood control, erosion, recreation, fish and game, and particularly to study the problems of its protection.

The route of travel was from Pasadena via Mt. Wilson to Barley Flats, Chilao, and the north slope of Mt. Waterman to Buckhorn Flats, where lunch was served by the Junior Chamber of Commerce. President Lathrop Leishman of the Junior Chamber welcomed the party and explained the interest of the organization in forest conservation and fire prevention. Forest Supervisor Mendenhall of the Angeles gave a talk on the resources of the Forest and the Forest Service policy regarding recreational use of the Forest. This was followed by a talk by Dr. George P. Clements, Manager of the Agricultural Department of the Los Angeles Chamber of Commerce, on water and agriculture; a talk by Harvey S. Bissel of the Angeles Forest Protective Association on cooperation; and Claud Sopp, Assistant Engineer of the Pasadena Water Department who described the steady lowering of the water tables because of increased consumption, subnormal rainfall, and other factors. William Dunkerley, Secretary of the Pasadena Chamber of Commerce, related the interest of the senior civic body in conservation. - R. 5 Bulletin.

YE EDITOR DISCOVERS

The receipts derived during the fiscal year ended June 30, 1930, from the sale of Forest products and use of Forest lands aggregate $6,762,000, which is an increase of $462,000 over the preceding year. This increase is made up by activities as indicated below:

Timber	$291,000
Grazing	203,000
Special Use	13,000
Fire Trespass	- 36,000
Occupancy Trespass	- 3,000
Waterpower	- 6,000
Net total	$462,000

By regions the increase in receipts was accounted for as follows:

Region	7	$234,000
"	5	228,000
"	2	127,000
"	4	87,000
"	1	60,000
"	8	28,000
"	9	21,000
"	6	-322,000
"	3	- 1,000
		$462,000

The total receipts from timber were $4,384,000 collected by Regions in the following order:

Region 5	1,214,000
" 6	1,126,000
" 7	508,000
" 1	489,000
" 2	466,000
" 3	279,000
" 4	156,000
" 8	93,000
" 9	53,000
	$4,384,000

- - - - - - - -

Fellowships have been awarded by the Charles Lathrop Pack Forest Education Board to two members of the Forest Service - Bernard Frank, Assistant Forest Economist, Washington Office, and Raymond Frank Taylor, Technical Assistant, Tongass Forest.

Mr. Frank will make studies at the University of Wisconsin and field investigations in the Lake States of land classification methods and land utilization technique especially as applied to forest lands, together with the preparation of a program of land use for a specific region.

Mr. Taylor will make studies of the silvicultural management of coniferous forests at the School of Forestry, Yale University, supplemented by field work in Washington and Alaska.

Fellowships were also awarded to James Lindsay Alexander, Assistant Professor, College of Forestry, University of Washington, Seattle, Wash.; Ralph Caird, graduate student, University of Chicago; George Ritchie Lane, Forester in charge of reforestation, Canada Power and Paper Corporation, Grand' Mere, Province of Quebec, Canada; and John Burton Woods, Forester, Long-Bell Lumber Company, Longview, Washington.

- - - - - - - -

The Junior Forester eligible list as it finally came to the Forest Service included 79 names. In addition to certifying this number to the Service, eight names were sent to the Biological Survey and 18 to the Indian Service. For the first time in the history of the Junior Forester examination a girl took and passed the examination. She is Miss Margaret C. Stoughton of Osage, Iowa.

- - - - - - - -

The report of a special committee appointed by the Secretary of Agriculture to make a study of the features or qualities of major public importance of the Mount Hood Area in the Mount Hood National Forest has just been published as a Senate Document at the request of Senator McNary of Oregon, Chairman of the Senate Committee on Agriculture and Forestry. The publication also contains the summary of data compiled for the Mount Hood Committee by Region 6. The report is entitled "Public Values of the Mount Hood Area" and is published as Senate Document No. 164, 71st Congress, 2d Session.

- - - - - - - -

At the invitation of the Office of Information, Department of Agriculture, the American Association of Agricultural College Editors will hold its annual convention in Washington August 26-27-28. The editors of the various Bureaus of the Department will act as hosts and have formed committees to prepare for the program, reception, and banquet. C. E. Randall of the Forest Service will serve on the reception committee.

- - - - - - - -

Dr. Clarence F. Korstian, silviculturist of the Appalachian Forest Experiment Station has been elected by the trustees of the Duke University, Raleigh, North Carolina, as Director of the Duke Forest and professor of silviculture at Duke University. He will leave the Service sometime this fall to take up his new duties.

- - - - - - - -

Region 4 has reported informally that in the insect control work in the lodgepole type on the Forests near Yellowstone Park, approximately the following numbers of trees were treated last spring: Targhee, 35,000; Wyoming, 18,000; Teton, 6,000; Caribou, 6,000; Cache, 14,000. A good job of spotting and treating was done, and the local officers are confident that only scattering infested trees will be found next season. With experience and better equipment, more effective results were obtained in spraying the thin-barked lodgepole with oil and heating the bark enough to kill the insects, without felling the trees, than in previous seasons. This "burning standing" method costs only about half as much as cutting and peeling the trees.

- - - - - - - -

Forest and Stream for July announced that the current issue was its last under that title, and that its name and subscription list will be taken over by Field and Stream, commencing with the August issue.

ATTENTION!

A man giving his name as "Sherman" and claiming to be a first cousin of E. A. Sherman's has called at two Forest Service offices (at least) and borrowed small sums of money, which he has failed to repay. The man is an imposter. Mr. Sherman's only living cousin on the Sherman side of the house is Charles Sherman, a rancher of considerable means, living at Pactola, South Dakota.

DEPENDING ON PER DIEM GUARDS TO HELP OUT

The fire season started early on the Lincoln Forest this year. The rains in May relieved the situation for a few days, but high winds and low humidity soon increased the danger. Before the summer rains start, we may have a serious emergency and we are depending a great deal on you to help us out. Up to the present time, June 7, there have been 5 Class A, 6 Class B, and 5 Class C fires which is a lot more than we had at this time last year. Nine of these fires were man-caused. The largest occurred in the Cedar Creek locality on the White Mountain District. It burned over about 150 acres. Seven per diem guards were on this fire as crew bosses, one of them with a crew of men being the first to arrive at the fire. - Lincoln Per Diem Guard Bulletin - R. 3.

BELIEVE IN SIGNS

"Here lieth, one Stephen B. Ware
Who for passing 'Stop' signs had a flair
One day on a ridge
He drove over a bridge -
A bridge that, it chanced, wasn't there."

FOREST SERVICE
U S
DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
Theodore Roosevelt

VOL. XIV No. 30 WASHINGTON, D. C. JULY 28, 1930

TWENTY-FIVE YEARS

By Harry H. French, Wichita

I have always been interested in the great out-of-doors,-what nature has provided in its forests, streams, and other resources that go to make up the economic welfare of the nation. I came to the Rocky Mountains when this country was in its make-up. Little thought was given at that time to the future as related to the use of its forests or its apparently unlimited grazing resources. In the locality where I lived, some very serious fires occurred. None seemed to take a great deal of interest or concern, unless their private holdings were in immediate danger. Then an effort would be made to at least protect their own properties. About three years before entering the Forest Service, a fire occurred near where I was living that burned over the greater portion of one township. I and one or two others were instrumental in organizing the community to suppress the fire, or at least prevent it from spreading. One did not need to have any keen sense of observation to appreciate the damage done to the timber and grazing resources, as well as the changes in stream flow in that section. Springs that formerly served as stock watering places dried up early in the season and erosion was more in evidence.

When the subject of forestry was being brought out and the setting aside of National Forests was undertaken, my interest was increased, and, with a considerable forfeiture of my personal interests, I took up this work.

I can well recall in early September, 1905, that I received a communication from Smith Riley, asking if I would accept a position as Forest Guard with the least possible delay at an attractive salary of $60 per month.

My assignment was on the Frying Pan River at Norrie, a logging camp on the Colorado Midland railroad, a railroad that aided in the development of one of the most important mining and agricultural regions on the western slope and that has long since been relegated to the junk pile.

Timber trespass was prevalent on every side. Many were engaged in cutting and shipping timbers and props to the various mining camps, which were quite active at that time. Of course, the operations of the occupants of these logging camps, who contended they were operating in good faith under the mining laws, permitting the removal of dead timber from the public domain for mining purposes, had to temporarily cease when the then-called "Forest Reserves" were placed under administration. Norrie was the principal seat of trouble in why I was stationed at this point. There was a clamor from every side for timber sales, to legalize their operations, although many of the "Tie Hacks" contended that "Uncle Sam" was interfering with their activities, and some of the worst agitators made it a little unpleasant for and worried a new forester in no small degree.

In a comparatively short time, I had over 50 timber sales scattered along the Frying Pan River. Reports on timber scaled had to be submitted at the end of each week and one felt he had a man-sized job, as every fellow thought his wants should be attended to first. Plans of work and trip schedules had not yet appeared on the scene, the policies were not established, and with the opposition prevalent and the demands to be met, necessarily one's time was fully occupied.

I made Norrie my headquarters until December of that year, traveling out from there as far as points on the Crystal River near Mt. Sopris, paying my own expenses (not, however, from the salary received), and with the requirement that I furnish and feed two horses. For all that, I enjoyed the work and had the satisfaction of trying to carry on an important work, even though it was executed far from efficiently.

In December 1905, I was called into the Glenwood office to assist in the work there. I attended, in company with F. A. Silcox, a public gathering organized for the purpose not of lauding the Forest Service for the work it had undertaken, but rather of throwing a monkey wrench in its mechanism. Its principal speaker, was our now Honorable Congressman Edward T. Taylor.

In October 1906, I was placed in charge of the Holy Cross Forest. By that time, that section was considered as the center of the hotbed of opposition. Late in 1906, a stock meeting was held at the town of Basalt. Some of the worst agitators, including Fred Light, the most important figure in the famous "Fred Light Case", were present at this meeting. A resolution was proposed and adopted, by which the cattlemen agreed not to make application for grazing permits, as they contended that the Government had no authority to demand a fee under a permit system. Although every effort had been made to explain to them the situation and how they were jeopardizing their own interests by taking such an obstinate stand, the above resolution was adopted. I told them that as a representative of the Forest Service I felt sure the Government would not hold such action against them in considering their future needs and interests, and that I had a supply of blank forms for making application for grazing permits, and if any desired to make such request, even with the idea of withdrawing it later, I would be glad to take their applications. I also advised them that immediately following the meeting, I planned to wire the Forester at Washington, D. C., the action taken by the representatives at this gathering. Before I left town, without an exception, as I remember, I had signed applications from each one present for a grazing permit.

What followed relative to Mr. Light's stand on the question is, of course, a matter of record.

Shortly after the Central Colorado Power Company began the installation of their hydroelectric plant in the Glenwood canyon, a large force of men was employed. The crew was made up of all types and classes, many of them none too good citizens. These were the days of pre-prohibition and quite a lawless element was in evidence. There were lots of saloons in Glenwood Springs, several miles from the scene of operation. To handle this phase of the question more efficiently and economically, two of the most notorious dispensers thought they saw a chance where there would be less restraint and better opportunity to separate the laborers from their daily wage and conceived the idea of placing a booze emporium near the operation. This was located close to the plant on Forest land; the parties contending they were either on land controlled by the power company or on privately owned land. It did not take long to definitely determine that their improvements were on the Forest. These gentlemen were given five days in which to remove their improvements. I well remember when they came into the office and, in the bold way they handled their business, proceeded to advise me that they expected to continue the operation, as it was much better to have this condition going on out there than for the men to come to town, because it took them away from their work and interfered with the employment of a steady force. But before they left the office they understood that the Government meant business, and the nuisance was removed from Forest land within the required time.

Sometime after this the Forest Service attempted to issue a permit to the Central Colorado Power Company for the use and occupation of the lands upon which their plant was located, which provided for a fee on the basis of the amount of electrical energy generated. To this they protested, partly on the ground that they were on alienated land and the government had no authority to make such charge. The question as to title of land was disposed of, as well as the authority to collect a fee. Many interesting things came up in connection with this case. It was an extremely important one, as the decision by the courts would determine how similar future cases would be handled with respect to operation of hydro-electric plants on National Forests.

To work with the type of men that represent an organization of such national importance, and of loyal service to the country, has been a pleasure. Yet when I look back over these years and consider the changes that have taken place, many bring to mind pleasant memories, yet some cause regrets.

Having had charge of three National Forests during my period of service, it has given me varied experience. After being on the Holy Cross Forest 16 years, naturally, it was with some regrets I left it. But the Uncompahgre had problems differing in some respects, which made it extremely interesting. The same is true of the Wichita. Adjusting oneself to new conditions and meeting new problems that continually come up have had considerable to do with the success and progress of the Service as a whole, and have attracted and held the interest of those engaged in the work. Personally, I am proud that I have been a member of such an organization over a period of twenty-five years.

THE NEBRASKA FOREST OF 1930

By E. E. Carter, Washington

Our oldest planting project is on the Bessey Division of the Nebraska Forest, formerly (and appropriately) known as the Dismal River Forest Reserve. Work there started in 1901 when two 40's bordering the Middle Loup River and suitable in part for nursery use, were withdrawn just ahead of entries. There is no better example of the willingness of American forestry to tackle any problem, no matter how adverse the conditions. In this case, a soil of such pure and deep sand that there is no surface drainage, an average annual rainfall of only about 16 inches, dry winds, a bad fire danger, both native and exotic insects, tree diseases, and strong competition for soil moisture from grasses and shrubs made the establishment of plantations difficult and costly. The only native trees were a few cedars and stunted hardwoods on the river bottoms bordering the Forest and one or two patches elswhere.

Now we have some 12,000 acres of pine plantations. They practically all date from 1911 or later, for under the planting methods used before that date, only scattered remnants survived the droughts and fires. The dreariness of the sandhill region is broken by the presence of real forests with closed crown canopies. The use of wood (thinning material) for fuel instead of cow chips is being relearned by the local inhabitants. Bird and animal life has changed. Deer are plentiful in the plantations, especially does with fawns. The tip moth, which threatened to make impossible the growing of western yellow pine, seems to have been rendered practically harmless by a parasite brought in by the Bureau of Entomology. Purchases, under special Congressional sanction, have given room for the development of a good nursery, sheltered by windbreak hedges. Incidentally, a deposit of clay has been found on the area last purchased, and its worth increased thereby to the amount of at least $1,400. The nursery is the recreation center and picnic grounds for the entire region. The opportunity for work in the nursery and in the planting camps literally means survival for many local families.

The Forest, with its nursery, has become one of the dominant factors in the economic life of the community, and will be increasingly so as the plantations expand and the use of their products develops. The Service, after many tribulations, is accomplishing in part its objectives in this project, and the prospects for full accomplishments are better than ever before. The sort of faith that is said to move mountains, plus the effort that comes only from such faiths, is foresting the sandhills.

FIRE DAMAGE AND DEGREE OF PROTECTION

By H. T. Gisborne, Northern Rocky Mtn. Exp. Sta.

R. D. Maclay's note in the Service Bulletin of June 9, has a bearing on one point which was much debated by the Fire Committee during the recent District Foresters meeting in Washington. The determination of the degree of protection that should be given to different timber types naturally is affected by the ability of the species in that type to withstand injury and death by fires of different intensities. Maclay's data indicate the desirability of three times the protection for Sitka spruce as compared to Douglas fir, considering only the susceptibility of these species to death by the Campbell fire. Obviously, more cases are needed before conclusions can be reached, but these measurements are evidence, not mere opinions.

It is interesting to compare with Maclay's report the results of a tabulation by Marshall published in the Northern Rocky Mtn. Experiment Station annual report for 1928 and program for 1929. Marshall's measurements show, for a permanent sample plot in northern Idaho, the percentage of trees of each species which were found to have been killed by fire, in the second examination, 15 months after the fire.

Species	Percentage Killed by Fire Marshall's Report	 Maclay's Report
Western Larch	2%	
Douglas fir	19	19%
Lowland white fir	45	
Lodgepole pine	50	
Western white pine	60	
Sitka spruce		69
Western red cedar	73	45
Englemann spruce	75	
Western hemlock	78	31
Alpine fir	94	

We need more of these measurements.

AN EXHIBIT OF SOUTHWESTERN RANGE PLANTS

This exhibit was constructed primarily to present information that will induce greater interest in and appreciation of our native range plants both by the stockmen and by the public, and to impress upon them the primary fundamentals of range management that are necessary to meet the growth requirements of the important forage plants. This exhibit was designed to present this information in a graphic, understandable, and catchy manner by use of actual plant specimens.

With such a limited number of species, it was possible, of course, to present some of the main types only of the range plants. These are arranged in three groups, namely: forage, poisonous plants, and plants indicative of overgrazing.

The forage plants are presented in the three commonly used groups, i. e., grasses, weeds, and browse.

The grasses are again subdivided into three groups, the first being sod or turf formers, the second bunch grasses, and the third tufted species. The first of these is represented by blue grama (Bouteloua gracilis) and by curley mesquite (Hilaria cenchroides); the second by Mountain Muhlenbergia (Muhlenbergia montana) and Arizona Fescue (Festica arizonica); and the third by side oats grama (Bouteloua curtipendula) and blue stem (Agropyron smithii).

The weeds have one representative each of perennials and of annuals. The perennials are represented by the red and yellow pea (Lotus wrightii) and the annuals by filaree (Erodium cicutarium).

The shrubs are divided into two groups, designated large woody shrubs and other types, the first of which is represented by Turbinella oak (Quercue tubinella) and Mountain Mahogany (Cercocarpus montanus) and the others by Estafiata (Artemisia frigida) and chamisa (Atriplex canescens).

The display of poisonous plants was designed more to bring out the relation of many poisonous plants to range management than to indicate methods of control, etc. Pingue was used to represent the double role of a poisonous plant and one indicative of overgrazing. Also, the object was to show that generally poisonous plants are taken in dangerous quantities only when there is a scarcity of good forage. Neither the plant indicator nor the lack of forage ideas are brought out clearly by the exhibit as it is now constructed, and it is suggested that a mounted statement similar to the one under plants indicative of overgrazing be prepared to bring out these features. In this exhibit we used rattlepod loco (Oxytropis lambertii), pingue (Actinea floribunda) rayless goldenrod (Aplopappus heterophyllus) and whorled milkweed (Asclepias galioides).

Under the plants indicative of overgrazing, there is a representative of the annual plants and one of the perennials, knotweed (Polygonum aviculare) being used for the former and snakeweed (Gutierrezia sarothrae) for the latter. Also, in this section there is a mounted statement briefly explaining the role of these plants as indicating overgrazing or other range disturbances.

Each specimen in the exhibit has a descriptive title mounted on the same board. This This title is typed in capital letters and gives the primary habits of the species, its general distribution, topographically and altitudinally, and information on the forage values, proper seasonal use, proper degree of utilization, etc. - Region 3

OUR BIG TREE DEPARTMENT

"California has more than 41,000,000 men employed in the lumber and wood-working industry." (West Coast Lumberman, May 15, 1930, p. 126.)

The habit of multiplying all California figures by 100 or 1000 seems to be spreading.

HIGH VALUED CEDAR

By Jack B. Hogan, Colville

The present market condition for timber products has not tended to lower the price nor lessen the demand for cedar poles on the Colville Forest in Northeast Washington. With the exception of Rangers' sales and one or two small Supervisor's sales, where the timber has been sold at the minimum price, the sale of green timber on this Forest is at a standstill.

However, the demand for western red cedar poles on the Colville Forest is keen. This Forest has always enjoyed a brisk demand for this class of timber. There are three or four bidders for every cedar area that has been advertised for sale. For sales made since January 1 the prices being received range from 3-5/8¢ to 4-5/8¢ per linear foot.

Using a converting factor of 3 board feet per linear foot, in terms of M. ft. B.M. cedar is being sold for $12.08 to $15.42 per M. In addition to the stumpage price the purchaser pay 1¢ per linear foot to cover the cost of brush disposal.

YE EDITOR DISCOVERS

Headquarters for the new Intermountain Forest and Range Experiment Station are to be at Ogden, Utah. The establishment of this station, which was announced in a recent issue of the Bulletin, consolidates research and silvicultural studies in the Intermountain Region. C. L. Forsling is Director of the new station. The technical staff of the station now numbers six and it is expected that several additional positions will be filled in order to carry on the enlarged range and silvicultural work.

- - - - - - - - -

Three more members of the Forest Service received the degree of Doctor of Philosophy this year: R. M. Nelson, of the Appalachian Experiment Station, at the University of Minnesota; Robert Marshall, of the Northern Rocky Mountain Experiment Station, at John Hopkins; and R. E. McArdle of the Pacific Northwest Experiment Station, at the University of Michigan.

- - - - - - - - -

Professor Emanuel Fritz, member of the staff of the Division of Forestry at the University of California, is to become editor of the Journal of Forestry beginning with the October issue. He will succeed S. T. Dana, now Dean of the Forest School at the University of Michigan. Professor Fritz is well known in lumber circles where he is regarded as having a thorough knowledge of the problems that confront the industry.

- - - - - - - - -

The Annual Planting Report from the Northern Rocky Mountain Region states that 340 pounds of western white pine were extracted from the 975 sacks of cones collected last year. The yield was far below average due to wormy cones and those but partially opened. In 1927, the collection yielded ½ pound per bushel (about the normal whereas the 1929 collection was less than ¼ pound per bushel. After the seed had been extracted, 28,000 cones were sold to an artificial wreath manufacturer at one cent each.

- - - - - - - - -

Margaret C. Stoughton graduate of the Iowa School of Forestry; who recently passed the Junior Forester Examination, has been appointed as Junior Forester at the Appalachian Forest Experiment Station.

- - - - - - - - -

There are 135 known mountain passes in Colorado, 51 of which cross the Continental Divide. Of the total, 26 are crossed by automobile highways, 13 of these being in the Continental Divide.

Wild life exhibits will be shown by the Department of Conservation at twenty seven of Michigan's fairs during the coming fall, it has been announced by the Educational Division of the State Department of Conservation.

THE ALLEGHENY FIRE EXPERIENCE STATION

By Eunice Skamser, Allegheny For. Exp. Sta.

A telephone call to a local firm:

"I am speaking for the Allegheny Forest Experiment Station."
"Whassat?"
"Allegheny."
"Allegheny."
"Forest."
"Fire?"
"No, F-O-R-E-S-T."
"Don't you have to do with fires?"
"Yes, but this word is forest. The next is Experiment."
"Exper-i-e-n-c-e?"
"No, EXPERIMENT. And the last word is STATION.

This is not hypothetical, it is a common occurrence and it seems no precision of diction can overcome the suggestive psychology.

Local experience in mentioning the work we do has firmly convinced me that were we to play the old game of mentioning one word and the contestant suppling the one that comes first to his mind, in nine cases out of ten Forest would be followed by Fire. Whether fires are more familiar to Philadelphia people, or they enjoy them more than the trees and open spaces, or whether they naturally think that fires are a necessary accompaniment of forests, is hard to say. At any rate, they all seem happy when assured that the experiment stations do experiment with causes of fires, ways and means of putting them out, and their effect on the forests.

EDUCATION BY TALKIE

Shall we do our future teaching by talkie? John W. Hammond of the General Electric Company thinks it probable.

"It is quite likely that the newspapers of 1950 will say, when reporting the commencement exercises at Harvard, Yale, Princeton or other universities, 'the graduating class was addressed by the late Prof. Albert Einstein, who conducted experiments illustrating his theory of the fourth dimension.'

"Or, on some other occasion of that period, the reporter may write (as he could with perfect accuracy): 'Sir Oliver Lodge, who died several years ago, spoke to the audience on "Action of Forces in Space," and conducted several interesting experiments during his address.' Sir Oliver Lodge will be quite capable of doing this - without resorting to a demonstration of his favorite doctrine of spiritualism - for this identical lecture of his is now on record as a talking-picture film, and has already been given several times in America while Sir Oliver himself was going about his daily affairs in England.

A recent demonstration described by Mr. Hammond appears finally convincing. An audience of three hundred at the Carnegie Institution of Technology in Pittsburgh recently saw what education might become, when four eminent scientists appeared before them, talked to them, and conducted investigations and demonstrations through the medium of the talking motion-picture.

"These talking-screen lectures were every bit as graphic as original addresses.

"The audience would have seen no more and would have heard no more if the lecturers had been physically present. Indeed, they might actually have seen less because, by utilizing the device of the movie 'close-up' the screen lecture enables every one in the audience to stand at the lecturer's side and observe at arm's length the details of the experiments. In effect, spectators in far corners of the hall found themselves in the front row.

"Thus, when Sir Oliver Lodge touched a coil of stiff wire fixed in an upright position, causing to to vibrate, a close-up of the wire made it appear no farther away than a mere finger's reach. And when he showed how a swinging pendulum is suddenly slowed up when passing through a magnetic field, the apparatus and the experiment seemed to every one in the audience to be within a few feet."-Clipped

RHODODENDRON BOOTLEGGERS

The demand for rhododendron plants in the Southern Appalachians has given these shrubs an important place in the sales of the Pisgah National Forest. The prices which nurseries will pay for them have afforded employment for many of the local people on the Grandfather Ranger District this spring. The rising value of the shrubs tempted some operators to work up a thriving business from the district's supply of shrubs without Ranger Coffey's consent. They worked at night and during stormy periods and it was very difficult to get any evidence whatever. Lying in wait at piles already cut brought no results So Coffey drove carpet tacks in the roots of such shrubs as could conveniently be reached without disturbing the piles and decided that waiting at the nursery at Pineola would be more comfortable and profitable. Apparently the operations were resumed immediately after Coffey left the neighborhood. He didn't have to wait long for the shrubs with the carpet tacks in them. That evidence brought admission and other developments and seven men were brought in by Ranger Coffey to the May term of Federal Court in Asheville charged with violation of Section 47 of the Criminal Code. All defendants pled guilty and each was given a six months' sentence suspended on good behavior. - R. 7 Bulletin

NOTES ON NORTHERN UTAH FLOOD

Forest officers in the Region undoubtedly have read in the newspapers of the disastrous floods which occurred in the Wasatch mountains from Devil's Slide to Spanish Fork Canyon on the afternoon of July 10. The terrific erosion on the slopes east of Salt Lake City is one of the worst examples observed in recent years. Every sidehill on which the vegetation had been depleted by fire or overgrazing is now engraved with gullies of all sizes. There is much to indicate that the floods which came out of the numerous canyons and caused damage to property, as well as the erosion on the hillsides, we contributed to very materially by the depletion of vegetation through fire or overgrazing. The effectiveness of plant cover in retarding run-off and preventing erosion is well illustrated by a small steep tributary of Parley's Canyon, which comes in just above the mouth of the main canyon. This is a very steep slope which has escaped fire and now has a very dense cover of brush. Hardly a drop of water ran out of this canyon and no erosion was observed, in spite of the fact that this canyon was in the heart of the storm. Depleted hillsides all around it are gutted by erosion. - C. L. F. in R. 4 Bulletin.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

VOL. XIV. NO. 31. WASHINGTON, D. C. AUG. 4, 1930.

TWENTY-FIVE YEARS

July 1 has come and gone. A new fiscal year has brought its opportunities and perplexities into our separate fields of activity, and for the many members of the Forest Service a new year of employment in public service has begun. Many of us have passed a fair number of milestones. Five, ten, and fifteen-year records are not uncommon. In the Branch of Research, however, we have one 25th anniversary that is outstanding not only for the length of time in professional forestry which it represents, but even more for the achievements of the individual. This quarter-century mark in Forest Service work has been attained by that co-worker somewhat affectionately known as "The Boss," who has now served over 15 years as Assistant Forester in Charge of Research. The chances are that the Boss himself has not wasted much time looking back over past achievements, but has rather girded himself for new. That has surely been his fixed habit of thought during these many years. It may not be amiss, however, for the rest of us to look back for a moment over a career that is interwoven so inextricably with the history of the Service.

On July 1, 1905, Earle H. Clapp received his appointment as a Forest Assistant in the Forest Service. The new employee's duties were many and varied. He marked timber here, surveyed there, looked into trespass cases somewhere else, and between times he "inspected." Apparently he did his job well, for in 1907 he became Chief of Timber Sales, and in 1908 Chief of Management. When later the Districts were formed we find him serving first as Assistant and then as Associate Forester in the Southwest.

In 1915, Col. Graves, then Forester, requested Clapp, who in the meantime had become a Forest Inspector in Silviculture, to administer the research activities of the Service. A Branch of Research was duly organized, but before any really rational development was possible, the war was upon us. In its aftermath came a set-back for research but despite many obstacles a smooth working organization was built up in a comparatively short time. Accomplishments show that this was by no means a makeshift organization but one that is being developed along broad, permanent lines. This is attested by a growing Forest Products Laboratory that soon will have its own building, and a series of experiment stations covering - at least potentially - nearly every distinctive forest region, where are being developed coordinated silvical, range, economics, and products investigations in a comprehensive unity of endeavor to place at the country's disposal every obtainable fact that will aid in the conservation and management of our forest and range resources, public as well as private. Related closely to these activities are the Forest Taxation Inquiry and the nation-wide inventory of our forest resources and requirements.

These achievements in so short a time and against such odds have not gone unrewarded. Clapp has had bestowed upon him a doctorate by the University of Michigan. More recently he has been made a Fellow of the Society of American Foresters. Valued as these distinctions must be, it is probable that his most treasured possession is the pen used by President Coolidge in signing the McSweeney-McNary Act. This pen and a letter, appropriately framed, were given him by former Secretary Jardine "as an expression of appreciation for your valuable efforts in laying a foundation for an enlarged Forest Research Program."

Although Clapp's efforts have been devoted primarily to the truly gigantic task of bringing the research activities of the Forest Service to the threshold of their period of greatest usefulness to the public at large, his activities have had a marked influence upon Service policies. He has consistently stood for progress, and for high standards of Service recruiting, performance, and publications, as well as for that loyalty both to subordinates and superiors that serves to weld any organization into an efficient working unit.

He may not be as lithe as when he scaled his first log; his hair may not be as dark as on the day he turned in his first report; but his spirit is still as young, and his mind as ready as ever to take up new ideas. And that in itself is somewhat of an achievement with which to mark a quarter century! - E. N. M.

"OTHERS SEE US"

In the opinion of the Review, the greatest constructive agency of the Federal Government functioning today is the United States Forest Service.

We believe that the Forest Service is nearer to the people than any other agency of the Government and yet we doubt if many living here in Randolph County either on the edge of the Forest or in it, quite fully realize that fact. The Forest Service is nearer to the people for several reasons. It is doing something tangible, something which can be seen, on behalf of the people.

"Well, just what is it doing for us?" some may be inclined to ask.

In the first place the Forest Service is rebuilding the forests. It is doing what nature, unaided, did in the first place. It is making trees grow where they grew before. It is conserving one of our great natural resources. It has taken over denuded land and is planting trees. These trees will be available for commercial purposes, under Government supervision some day but there will not be the waste that there has been in the past. This tree planting is also going to contribute to flood prevention and to put a stop to the rapid erosion of the soil because the water will not be permitted to run off at once.

The Forest Service is building roads and telephone lines not only as a means to conserving and protecting the forest from the ravages of fire but that the people may go into the forests and partake of the peace and tranquillity which they furnish.

The Forest Service does not say "Keep out." It says "Welcome. This is your forest. Camp in it. Build a cottage in it, at small expense. Here enjoy yourself. It's as much your Forest as it is the other fellow's." Now, we will leave it to any one, if such a feeling of possession is not a fine one to foster and encourage. Is it not fine to feel that we are part owners of the Forest? That it really and truly belongs to us and that we can go into it and fish and swim and camp and rest and say to ourselves, "And to think that it's part mine."

This Forest Service is one of the agencies which is not constantly saying "Don't." It is not a negative agency. It is not even a regulative agency. It is a great constructive agency of the Government—the greatest agency in all the Government and we are for it first, last, and all the time, perhaps because we have been studying and trying to learn about what it is doing and perhaps because of the fine men in this service and their true conception of what a Government agency should be.

The only regret we have is that Congress does not make it possible for this agency, this Service, to do even more by liberal appropriations. Congress could well afford to cut down its appropriations for other purposes and be more generous with a Service which is accomplishing such great things for us all--for you and for me.

We say to you, folks, that a new world is being opened to us by the Forest Service--a world which belongs to us, rich and poor alike. We are all equals in the Forest. No one person has any more right there than another. It's just something over which one cannot help being enthusiastic. - Editorial in the Randolph Review, Elkins, W. Va.

HEIGHT OF TREES

By Harry D. Tiemann, Forest Products Laboratory

Discussion as to the world's tallest tree is ever vernal, but the funny part of it is that no one seems to be getting anywhere. Every little while someone digs up some ancient unauthenticated record and publishes it as though it were a discovery. If someone at the present time would only find a living tree, actually and undisputably 370 feet high, it could be pronounced supreme and a real discovery. But no one has. Most information upon very high trees seems to be from a quarter to a half century old. However I have a letter from David Mason giving data which he secured on a redwood in Bull Creek Flat which was carefully measured from two points of view, one indicating 359 feet and the other 368 feet. This is the tallest tree in the world of which there is authentic and reliable information.

In the May 26 issue of the Service Bulletin the subject once more bobs up serenely with quotation of unauthenticated source concerning regnans trees 400 feet high and a calophylla in Western Australia 537 feet; and in American Forests for March, 1930, reference is made to an article which appeared in its Volume 18, 1912, describing a eucalyptus on the Blacks' Spur near Healsville 480 feet tall and 25 feet in diameter. While in Australia I took particular pains to ascertain authentic information concerning the tallest trees. The tallest ever measured with accuracy was a regnans (mountain ash) which grew at Colac in Victoria and was 346 feet. Unfortunately this tree was destroyed.

Previous to this a prize had been offered at the Melbourne Exposition in 1888 for proof of the tallest tree. The honors were won by a tree 325 feet high, also an _E. regnans._ The account of a 537-foot tree in Western Australia mentioned in the note is all bunk. The trees in this region are none of them as tall as the Victorian trees. The tallest is the Karri, _E. diversicolor_, which reaches a diameter of 8 to 10 feet and an extreme height of 275 or 300 feet. There is no authentic record of any tree over 300 feet.

Certainly the word of the present Inspector General of Forests, Mr. C. E. Lane-Poole, a widely travelled and renowned forester, can be relied upon better than the superficial accounts of miscellaneous enthusiasts. Mr. Lane-Poole in an article on the Forests of Australia which appeared in The Timberman, March 1930, states that the tallest eucalypt is a mountain ash (_regnans_) in Victoria, 325 feet. I, myself, measured a mountain ash slightly over 310 feet high.

Living trees 250 to slightly over 300 feet high range from 8 to 12 feet in diameter with slightly swollen butts, but there is evidence that before the white man came to Australia taller specimens may have existed. I have seen a fallen giant whose trunk, though hollow, is still intact, which is 17 feet in diameter, but there are no means of knowing what its height may have been since its top is too shattered and decayed to piece it together again with any degree of certainty. This tree is at Sassafras about 60 miles from Melbourne. I happen to be especially familiar with the region of the Blacks' Spur near Healsville mentioned in the article in American Forestry. The tallest tree in that region at the time of my visit was a magnificent mountain ash 263 feet high and about 8 feet in diameter above the swelling. I obtained some splendid photographs of this tree. The late Mr. John Lindt, well-known old pioneer who settled in that region many years ago, would certainly have known of taller trees had there been any. Baron von Mueller's former observations seem open to question.

Whatever may be said as to size, the taller Australian eucalypts are without question among the world's most majestic trees, towering straight and round as a mast often without a branch for 150 or even 200 feet, and when it is considered that they weigh several times as much as redwood, one looks upon them with admiration and reverence.

Perhaps a much more important although less discussed question than supremacy in dimension is, what limits the height growth of trees? Presumably a tree should continue to grow upward until the topmost buds are unable to obtain sufficient moisture. According to theories of sap ascent by Ursprung, Renner, Dixon, Molz, MacDougal and Overton, moisture is pulled up by the osmotic suction of the leaves, brought about by transpiration at the surface in the sunlight. To pull a column of water to a height of 350 or possibly 360 feet would require a force of 10.3 to 10.6 atmospheres. Measurements on leaves have shown that the available suction force of the epidermal cells may be 7.5 to 10.5 atmospheres, and that of the palisade cells up to 17 atmospheres. May not this be the prime factor in height growth? But there is still some question as to the true cause of sap ascent; present theories do not fully explain all the facts. Here is a splendid field for research -- what limits the height growth of trees?

THE KNUTSON-VANDENBERG ACT

The Knutson-Vandenberg Act of June 9, 1930, contains a limited series of authorizations for appropriations for planting on the National Forests and authorizes a requirement as part of any timber sale contract for a deposit in the cooperative work fund to be used for planting the sale area or for "cutting, destroying, or otherwise removing undesirable trees or other growth on the National Forest land cut over by the purchaser, in order to improve the future stand of timber." The latter provision gives opportunity for putting sale areas in first class silvicultural condition beyond what has been possible under the authority of the Act of August 11, 1916, to require cooperative deposits for the "disposal of slash and debris."

The congressional committees which considered this new legislation eliminated from the bill as introduced all provision for the refund of any of such cooperative deposits as might be made under its terms. This is apt to result in some awkward situations if cooperative deposits are made in larger amounts than are found to be due the United States when a timber sale is completed. It will make necessary complete segregation in the records of deposits made for the "disposal of slash and debris" under the Act of August 11, 1916, from those made for planting or for silvicultural improvement work on the sale area under the Knutson-Vandenberg Act. Under this Act of 1930 funds not spent on the specific sale area are to be transferred to miscellaneous receipts, forest reserve fund, as a receipt of the fiscal year in which the transfer is made, thus avoiding the necessity for keeping open the receipts statement for each fiscal year for an indefinite time, or of reopening the record of receipts for a given fiscal year long after the close of that year. - E. E. C.

FOR CRYING OUT LOUD

By Jno. D. Guthrie, R. 6

The Portland Oregonian of April 25 carried an editorial on "Misuse of the Uniform." It was talking about the Oregon State Motor Police, and complained that city police, stage drivers, laundrymen, chauffeurs, deliverymen, etc., are wearing uniforms with old General Sam Browne's belt, which resemble much too closely the trim and natty Oregon State Motor patrol. The editorial might well have mentioned also Portland's Police Force, with their obvious imitation of the U. S. Army Officers' uniform.

Now there was a time when U. S. Forest Officers used to be nettled, and even complained, because bell-hops, Western Union messengers, taxi drivers, and even the U. S. Marine Corps, wore the forestry green whipcord. But that was long ago. We changed our cut and made the Stetson standard headgear, but that didn't help much, for the Boy Scouts came along and took most of these changes over. Then the U. S. Park Service became uniform-conscious, and beat us in neatness and nattiness. And now about all we've got left is a high-waisted 1915 model coat, and our buttons. Alas, alack!

INSIGNIA DISTINGUISHES FOREST SERVICE UNIFORM

By H. V. Beeks, San Bernardino

This writer thought that the uniform question was settled or buried. Since it is revived again, however, he digs up an old scheme, - a type of insignia which will really distinguish the Forest Service uniform from all others, and at the same time cater to man's undoubted, though never admitted, love of decoration and ornament. Be it known that the idea of having a radically different uniform from anyone else that is at the same time wearable, can not be done. The kinds and colors of cloth possible to use are limited, and so is the shape or style. Pants are pants (or breeches or trousers) and coats are coats. It is probably impossible to invent a new design that is not already being worn.

In order to make the Forest Service uniform different and immediately recognizable as such, we must follow some such plan as the following, which we submit with the utmost good will and cheerful indifference. And as hinted above, who can oppose a little decorative insignia when there is such outstanding necessity for it!

The plan: Continue with the present uniform, but add to it the following identifying and distinguishing insignia:

Insignia of position or rank. To be worn on the right cuff of the coat sleeve where plainly visible: Forester, 2 silver stars; Asst. Forester, 1 silver star; Regional Forester, 2 gold stars; Asst. Regional Forester, 1 gold star; Forest Supervisor, silver horse; Asst. Forest Supervisor, gold horse; Inspectors, etc., 2 silver axes, crossed; Fiscal and clerical, 2 pens crossed (silver, gold); Rangers, 2 axes crossed (gold); Guards, shovel (red).

Length of service insignia, - should also be shown for yearlong appointed force, and this would be by the following symbols which would further distinguish the Forest Service from other uniforms. These to be worn on the left sleeve cuff: Service under three years, no symbol; 3 to 5 years, pine cone; 5 to 10 years, green tree; 10 to 15 years, navy blue tree; 15 to 20 years, gold tree; 20 to 25 years, silver tree; 25 to 30, or over, silver and blue tree.

Now wouldn't that make you look at yourself in the mirror? The above insignia symbols could be made up inexpensively through Government contract, and easily sewn on the sleeve. They should also be placed on the uniform shirt. - R. 5 Bulletin

YE EDITOR DISCOVERS

Expenditures from the fire fund for the first twenty days of this fiscal year were as follows: Region 1 - $19,000; Region 2 - $24,000; Region 3 - $2,750; Region 4 - $3,960; Region 5 - $31,000; Region 6 - $63,000; Region 7 - $8,831 (Incomplete. Does not include recent Monongahela fire costs); Region 8 - $505; Region 9 - $117.

Reports on fire conditions from the Regions as of July 24 are as follows: Conditions slightly relieved on eastern Forests but becoming unfavorable on western Forests of Region 1 Rains have relieved the danger in Regions 2 and 3, except that it is dry and hot in the Nebraska and Wichita. The danger in Regions 4, 8, and 9 is about normal. Several days of unusually low humidity in Region 5 with no resulting large fires. All fires in Region 6 out or controlled and weather is normal. Region 7 has had severe fires on the Monongahela but a recent rain has relieved the situation.

- - - - - - -

Entomologists at the Appalachian Forest Experiment Station are working on the effectiveness of certain injected chemicals as destroyers of bark beetles and preventives of the further spread of blue stains. They have discovered that blue stain is often carried into beetle-attacked trees by the insects, and that the blue stains can kill trees. Bark beetles whose hands and feet were antiseptically free, so to speak, from blue stain failed to kill trees, although blue stain alone injected into the sap would do so.

- - - - - - -

Those members of the Indian Service attached to the Quinault Indian Reservation in Washington have set a new standard for carrying on extraneous work while engaged in their timber sale activities. Taking advantage of delays in logging operations due to moving machinery, etc., these men in the last few years have collected volume table data on over 2,000 trees each of the half dozen species found on this Reservation. These include Douglas fir, western white pine, Sitka spruce, western hemlock, etc. Some of these trees cut out six 40' logs. The volume tables are being built up from these data by the Forest Service in cooperation with the Indian Service.

- - - - - - -

Arrangements are being made by Region 7 and the Allegheny Forest Experiment Station to set aside a tract of about 1,800 acres within the Allegheny National Forest, to be known as the Kane Experimental Forest. The object of this Forest is to establish a center of work for the Allegheny Station in the northern hardwoods type. A considerable part of the research of the Station in these northern hardwoods will be on this experimental area.

- - - - - - -

Hugh P. Baker has been elected Dean of the New York State College of Forestry, succeeding the late Franklin F. Moon. Doctor Baker was the first Dean of the College, serving from 1912 until 1920, when he became executive secretary of the American Paper and Pulp Association. Since 1928 he has been associated with the United States Chamber of Commerce. Doctor Baker is a graduate of the Yale School of Forestry and holds the degree of doctor of economics from the University of Munich. His earlier experience included about 10 years with the Forest

Service and several years of forestry teaching in the State colleges of Iowa and Pennsylvania.

- - - - - - -

Sparhawk has found a way to make forestry pay. Says he "Paragraph 11 of the German Royal decree of December 20, 1815, which turned over several forests and other property to the University of Munich reads: 'The Professor of Forestry and Agriculture shall exercise supervision over the forests of the University, and over the agricultural land and the Seligenthal (Happy Valley) Brewery, in order that these properties shall be used to the best advantage; with a strict control of the subordinate personnel, that the income may be increased over that obtained hitherto and the expenses diminished if possible.'"

NEW MOISTURE CONTENT METER

The Forest Products Laboratory has completed the design and construction of an electrical moisture content meter for wood that is practically instantaneous in its operation.

The new instrument is designated the "blinker" machine to distinguish it from others. The indicator consists of a pair of neon bulbs, one of which flashes at a standard rate while the other flashes at a rate determined by the moisture content of the wood being tested. The rate of the flash will be faster than the standard flash if the wood is wetter than the moisture content for which the instrument is set, and slower if the wood is drier. Contact with the wood is made by means of needle points built into a driving hammer. When desired, head phones giving a gentle click may be substituted for either or both neon tubes. The machine can be used conveniently to sort lumber above or below a selected moisture content, or it can be used to measure the exact moisture content by dialing the test flash into approximate time with the standard flash. The compactness and portability of the "blinker" instrument are among its chief merits. Its range is about 8 to 24 per cent moisture content, and it is accurate to about 1 per cent moisture content.

RECEIVED WHEN THE THERMOMETER SAID 108°

Gentlemen:

I would like some information about when the various fish in the streams of this state (Tenn.) can be caught best with hook and lines and also such information as I can get as to the best bate to use.

If I have made myself clear enough, I shall thank you to send such publications as will give me the information desired or advise me as to how to obtain it.

Thanking you in advance I am,

/S/

P. S. I have been advised that certain changes of the moon is when fish bite best. If so I would like to know about it.

- - - - - - -

Metalizing wood to make it fire resistant and moisture proof has just been developed in Germany. The scientist-inventors say that the natural color or grain of the wood is not destroyed. The wood is immersed into molten metal under pressure so that the metal will penetrate every part. - From The Washington Star.

ALASKA BROWN BEAR NOT FRIENDLY TO FOREST OFFICERS

By L. C. Pratt, Chugach

The Alaska brown bear seems to have taken a decided grudge against Forest officers. Several encounters in which bruin was the aggressor have been reported since last fall.

Ranger Chas. H. Forward, of the Chugach National Forest, reports that on June 9 he and Trail Foreman Paul Jones were attacked by a brown bear, and that the bear was decidedly the aggressor.

Forward and Jones were locating trail on the southwest end of Hinchinbrook Island. They had just left the beach and were progressing some five hundred feet following a grade along the sidehill. Jones was unarmed. Forward was carrying a .30-06 Winchester. Jones' attention was attracted by a movement on a cliff forty feet above them.

At Jones's cry of warning, Forward whirled about just in time to see the bear leave the top of the cliff and make toward them. Fortunately, instead of launching his attack directly over the cliff on top of them, Mr. Bear angled around the end of it. This placed him out of Forward's sight for a second or two and gave time to prepare for the reception. The bear made the bottom of the cliff, turned sharply, and made directly for the two men. As soon as he did so Forward "let have" taking the beast just above the eye and stopping him within fifteen feet of his intended victims.

The bear proved to be a 500-pounder, which is small for adults of the species. He had two old bullet wounds, one of which was through the forearm and still unhealed. This probably accounts for his vicious mood and likewise for the fact that he went around the cliff instead of hurtling directly down it.

The fact that the men were making considerable noise and that the wind was carrying directly to the bear indicates that the attack was made deliberately and with malice aforethought.

Forward cheerfully admits that his knees didn't quit knocking together for the remainder of the day.

GROUND HOG DAYS

By Jack B. Hogan, Colville

A small crew of men has been working on the logging railroad of the Hedlund Lumber and Manufacturing Company timber sale on Sherman Creek. Some time ago the men caught two very young ground hogs. Being tender-hearted, they decided not to kill the ground hogs but to bring them to camp and let the cat be the direct cause of their death.

It so happened that the cat had just recently become the proud possessor of a litter of kittens and upon being presented with the two young ground hogs she made no effort to devour them. The ground hogs, feeling hungry and just as much at home under the cook shack as in their hole along the railroad, immediately joined the kittens in partaking of a hearty meal.

At first the cat offered feeble objections, but as the ground hogs persisted in their efforts to secure food she gradually gave up, evidently deciding that, after all, they must eat. At the last observation of this mixed family the ground hogs appeared to be healthy and happy, and, according to the cook, the kittens were having a busy time combating for their share of food.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT. *** THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY **** TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER. Theodore Roosevelt

VOL. XIV No. 32 WASHINGTON, D. C. AUGUST 11, 1930

THE OLD MAYA EMPIRE AND FORESTRY

By I. T. Haig, Northern Rocky Mtn. Exp. Station

Lindbergh's recent spectacular flights of discovery and adventure over the jungles of Yucatan have probably brought afresh to many minds the romantic and mysterious history of the Mayas, one of the greatest of our North American aboriginal nations. We are told that these people came originally from central Mexico where the great ruins of the Old Maya Empire, to distinguish it from its upstart successor in Yucatan, still offer a fertile field of investigation for the student of Indian history. We are also told that the exact reason for the apparent migration of this entire people from their original home in Guatemala to the peninsula of Yucatan is still a mystery whose solution must await the arise of some Philo Vance among anthropologists.

But one suggested solution, related in legend form by S. G. Morley of the Carnegie Institution, holds considerable interest for the forester. This legend describes Tikal, the greatest metropolis of the Old Empire, in the year 531 A.D., an immense and handsome city centered around the magnificent buildings and gardens of the temple and palace, and situated in the midst of grasslands which swept as far as the eye could see in every direction. At this time the Maya people were at once at the zenith of their power and the threshold of their decline. For generations the once heavily forested lands originally surrounding their cities, towns, and villages had been gradually transformed under their primitive methods of cultivation into grass savannas. This method consisted in felling patches of the forest at the end of the rainy season in January and February, in burning the felled trees and brush at the end of the dry season in March and April, and in planting their corn after the first rains in May. The following year a new patch of forest was sought and no attempt made to cultivate the old until a new growth of brush had come back, for experience had shown that the use of the same cornfield two years in succession resulted in greatly reduced yields.

Eventually there came a time when the woody growth no longer returned to replace the original forest. Instead the field was taken over by perennial grasses and gradually in this way the whole countryside was transformed into savannas. These grasslands the Maya could not cultivate, since they had no way of turning the sod and they were obliged to go ever farther and farther from their homes to find suitable land for planting corn, the crop on which they depended almost entirely for their livelihood.

But the limit to which even this expedient was practicable had been reached at last for at the time described the cornfields lay two and even three days' journey from the cities and living conditions in many ways were becoming intolerable. Small wonder then that many a humble corn planter had stolen away with his family to the large and wonderfully fertile lands to the north of his own domain, in spite of the stringent laws and heavy penalties imposed on this desertion by both priesthood and nobility.

Gradually people continued to pour out of the Old Empire region into Yucatan. And so, if our legend is true, the disintegration of the Old Empire was largely due to the failure of the Mayas to solve a problem in agriculture directly linked with forest succession.

ANOTHER TWENTY-FIVE YEAR MAN

On July 5, 1930, H. N. Wheeler completed twenty-five years in the Service. He was born near Nortonville, Kansas, September 27, 1873, moved to Dodge Center, Minnesota, in the spring of 1887. Completing the ordinary schooling in country, grade, and high schools he received an A.B. degree from Milton College, Milton. Wisconsin, and an M.A. degree from the University of Colorado. After teaching in country, grade, and high schools and filling an assistant professorship in the Biological Department, University of Colorado, and working on farms and ranches in the summers, he spent the summer of 1904 with a survey party on a Government reclamation project. In the winter of 1904 and 1905 there were rumors of the extension of National Forests. Wheeler had spent much time in tramping over the mountains of Colorado, gathering and identifying more than 200 wild flowers. Learning much about forest conditions, such as unchecked forest fires, illegal cutting of timber, and fraudulent mining and homestead claims he felt the desire to help in forest protection and accepted an appointment as Forest Guard on the Gunnison Forest at Sapinero, Colorado, effective July 5, 1905, (after taking ranger's examination) at $60 per month.

In the fall of 1905 he was appointed Assistant Ranger at $75 per month and on April 1, 1906, became Supervisor of the Montezuma National Forest, at $1400. In July, 1907, Wheeler took charge of the Colorado Division, Medicine Bow National Forest, with headquarters at Estes Park, where he met the school ma'am, who became Mrs. H. N. Wheeler, June 22, 1909, at Bay City, Mich. In November, 1911, Wheeler was transferred to the Cleveland National Forest, San Diego, California, but again took charge of the Colorado National Forest, April 1, 1913. In the early winter of 1920 he was placed in charge of the "PR" office in Denver. In November 1924, he was transferred to Washington to carry on lecture work, in which work he is still engaged.

"H.N." did much lecture and other PR work while Supervisor and made local contacts that placed him in close touch with the life of the communities near the National Forests, on which he served, especially in Fort Collins where he was a director in the Chamber of Commerce, acted on many committees, sold Government war bonds, raised money for the Red Cross and Near East Relief, and helped keep up the morale by acting as chairman in patriotic meetings, serving as assistant chairman of the Larimer County Defense Board, etc. Through his activities 500,000 acres were added by Congressional action to the Colorado National Forest, which helped break the political opposition to National Forests in Colorado.

In those pioneer days of 1905 and 1906, allotment of stock on the range, timber sale procedure, and the reports on claims coming up for patent took much time. Everything was in the formative stage with no office help other than an Oliver typewriter and a few filing cases; so it was a busy time both in the woods and in the office. There were threats of doing away with the Forests and suggestions of violence against Forest officers. There was no equipment for fighting fire and few people knew how to stop a fire.

He attended the first Forest Supervisors' meeting when Assistant Forester Captain James

B. Adams met with the Colorado Supervisors at Glenwood Springs in September 1906. Harry French, now Supervisor of the Wichita National Forest and Wm. T. Cox, Forester for Brazil, also attended this meeting. "H. N." had something of a reputation as a rifle and pistol shot and at one time with a 22 special sixshooter killed 4 grouse with 5 shots, hitting them in the head or neck.

Wheeler has lectured in all States of the Union but three, and in two Canadian Provinces, and has been in every State in the United States, in Canada, Mexico, and Cuba. He believes in forestry and is convinced that it is much bigger and means more to the future of the United States than most foresters realize. After giving more than 2500 lectures he is still going strong.

Col. "Bill" Greeley once said, after hearing him lecture, "It would be a good thing for most of us if we had more of the faith that Wheeler possesses."

STILL MORE ABOUT PUMPS

By William V. Mendenhall, Angeles

Continuing the remarks about pumps in the June 16 issue of the Service Bulletin, much is to be said regarding the tank truck and its particular function in connection with water and pumps in general in fire control work. As stated in that article, the tank truck is rapidly becoming one of the most important pieces of equipment in handling fires while they are small, and our experience in the construction of tank trucks to meet our needs has brought out many points that undoubtedly would be of great value to others contemplating the construction or purchase of this type of equipment.

On the first job that was built, it was not planned to carry very much in the way of equipment, except just the tank with a capacity of 850 gallons and a pump and hose. This was mounted on a removable platform body so that the truck could be used for other purposes. We found, however, that what was needed was a truck that carried less water, had more speed, and also carried back pack pumps, shovels and axes, and equipment for a crew of approximately 15 men. This resulted in our designing the body from the frame up and getting the water load as low as possible. In selecting a design of a pump for a tank truck, our desire of course was to have a pump driven by the motor of the truck with a power take-off in the transmission. We were of the opinion that the same pump that is used to discharge the water from the tank could be used to take water from a sump, a creek, or a reservoir just as efficiently, but we have found out that this is not so. First, in discharging the water from our tank we recognize that it is to be applied on a fire when it is small and that instead of a large volume of water through the nozzle a very small volume is wanted under very high pressure. The idea is to obtain a steady stream from the tank for the maximum number of minutes possible. We find with a 450 gallon tank and our present pumping equipment, a good stream can be discharged for 18 minutes through a quarter inch nozzle under fairly high pressure. With the same equipment pumping from a sump where there is no limit on the supply of water, we do not care for such high pressure and desire a greater volume of water, but as yet there has been no pump designed that can afford us both of these features.

Mr. Scott, Chief of the Los Angeles City Fire Department, has considerable of a brush problem in connection with the protection of Griffith Park and he has been experimenting with pumps that would be suitable for pumping both a large volume at low pressure and a small volume at high pressure. He is of the opinion that in order to get the maximum efficiency from a tank truck it should be equipped with two separate pump units--one to discharge the water from the tank and the other to discharge water taken from a sump, water line, or reservoir. It may be that one of the light portable pumps like the Pacific or Ross might suit the purpose for discharging the water from the tank and a pump placed under the seat driven by the motor of the truck can then be of a much larger capacity, say 250 to 350 gallons per minute, so that when we have a large supply of water we can take advantage of it.

One of the large pump manufacturers is experimenting now on the design of a centrifugal pump of about 250 gallon capacity, which we hope will be one of the best pieces of equipment that can be bought for tank trucks. Our experience with rotary gear pumps so far has indicated that they are not very dependable because of the danger of sand getting into the gears, and a centrifugal pump would pass a reasonable amount of sand without damage. Insofar as the pump is concerned that discharges the water from the tank, very little risk is taken in connection with sand as care can be exercised in filling the tank to see that sand is not passed through. We have damaged two rotary gear pumps in the last year quite seriously by the passing of fine sand that came through the suction screens.

Our experience has also taught us that we do not obtain the desired speed if we overload our truck with water and that 450 gallons, or approximately an 18 minute stream, is sufficient for initial action on a fire. As a matter of fact I am not sure but that we will find that even a smaller capacity tank truck will have a very important place in our equipment lineup. In order to carry 450 gallons with necessary hose and pumps and still retain good speed, it requires a rather expensive chassis, and I am of the opinion that by cutting down the size of the tank we can build trucks on a light chassis that are a good deal more mobile on mountain roads and probably obtain just as much protection from them as from the heavy truck, especially for initial action. The heavy truck will, however, have an important place for follow-up work and will never pass out of the picture. Trucks with an 800 gallon or more capacity are particularly valuable, even though they are not speedy, in connection with hazard reduction work, such as roadside burning and camp ground cleanup work, as we can do this burning late enough to get a clean burn with safety.

AND WE REPEAT - WHY?

By Helen W. Gordon, Shenandoah

A reply, Mr. Editor, to Mr. McDaniel's article in the July 7 issue of the Bulletin. In the process of wrestling for nearly a score of years with Forest Service accounting systems, etc. I have pretty thoroughly forgotten my ancient history and Clio and her ilk have escaped my ken along with Adam and Eve, but I think that the idea of hiring one man, for wages, to do a certain job and giving him authority to redelegate that authority, for wages, to a lesser potentate was originated when the first monkey gave his rival a nice fat coconut for his favorite wife.

Evidently your scribe did not read the issue of March 10 very thoroughly, the ink must have faded before he got to it. The Shenandoah makes no claim to being a pioneer in the hiring of a man to fight fire, call him what you like, warden, state forester, or fire chief. Its only claim, if you could call it a claim at all (it was intended to be merely a history of the fire warden system in the Southern Appalachians), was that the system of appointing key men in the communities comprising the National Forests and allowing them to help in the selection, organization, and direction of fire fighting crews was first incorporated in the organization of the fire control forces on the Shenandoah.

The forests of the West are pretty much like a far distant star to many of us not privileged to see them at first hand, but from inquiries directed to many who know them intimately I gather that the fire warden system, as it is used at present on the Shenandoah and some of the other Southern Appalachian Forests, as the backbone of the fire control system, is unique in Forest Service administration. We have no wish to detract from the glory of the pioneers and are quite willing to take off our hats to the older and greater forests of the western country - long may they wave, but why can't we enjoy our warden system without having our bubble of self-esteem so rudely punctured.

THE SHRIEK OF THE DECIBEL

By D. P. Edgerton, Washington

What is a decibel? Ask the New York Noise Abatement Commission, which discovered it, or rather took its specifications. A decibel, according to authorities, is the smallest change the human ear can detect; an average conversation is 60 decibels, measured at a distance of three feet. A lion's roar is 80 decibels, as determined at the Zoo's respectful distance. A street radio loudspeaker is 81 decibels; a subway express, 96; a steamship whistle, 95; blasting, 98; and riveting, 99. Even this last figure sounds guiltless of auricular crime, but when it is explained that this number of decibels is 10,000,000,000 times the smallest sound in loudness it has an awakening effect.

What, however, has all this to do with the U. S. Forest Service?

Everything, these days! A skyscraper is rearing its haughty head just back of the Atlantic Building, 930 F Street, N. W., Washington, D. C., and is shrieking its taunts at the diligent summer remnant within those ancient and honorable walls which, for a quarter of a century, have housed Forest Service headquarters. And now this (or these) headquarters is (or are) bursting with the reverberations of 99 decibels every minute throughout every day. Field and office men, and particularly women, are reciting Longfellow mournfully as they strive to forget decibels and concentrate on milder things, and one can hear a constant repetition of yearnings for "the forest primeval" with its "murmuring pines and hemlocks." Surely, if such retreats remain on this industrial continent, one would there be free of decibels, or at least would meet only the more decent and decorous, that is to say, the little decibels.

HISTORICAL RESEARCH

By Jno. D. Guthrie, R. 6

Passing by the earlier historical researches of the eminent historical researcher, Edward N. Munns, and his slips incident thereto, we come now to his article on the origin and meaning of the names of these United States, which article, for some reason, appears in the Service Bulletin of June 30, 1930.

Among other results of his delvings, he says that Illinois comes from the word "Illini," "superior men." Can't the Doctor tell us what language, -- Choctaw, Modoc, Greek, Latin, or Siwash?

And then he says that the State of Maine was "named after the province of Maine in France in compliment of Queen Henrietta of England who owned it." (Underscoring mine). Now that isn't entirely clear. What did Henrietta own? England, France, the State of Maine, the province of Maine, or "It"?

Then, the Mississippi was explored by DeSota -- Desoto? Perhaps this is a lapsus mimeographicae? But now to the masterpiece. With the assurance born of genius, he states briefly, succinctly, and finally, that the name of our fair State of Oregon is an Indian word! "From the river of that name!" There has been no river of that name in Oregon since circa 1778, when one Jonathan Carver, in far-off New England, wrote a book called "Travels Through the Interior Parts of North America," and probably invented that Oregon River. And Carver swiped the word undoubtedly from a Major Robert Rogers, who used the words "Ouragon" and "Ouragan," as early as 1765 and 1772. Carver met Rogers, and having no personal knowledge whatever of any part of the country west of the Rockies, picked up a great deal of his information from him for his "Travels," and some of it is unauthentic.

The name "Oregon" for the present Columbia River would probably have never been known today but for Billy Bryant's "Thanatopsis," and because the word Oregon had a mouth-filling and sonorous sound. It was truly a poetic license. Anyway, there ain't no river Oregon, nor has there been since Captain Robert Gray, entering the river on May 11, 1792, as its discoverer, called it Columbia. Neither do Lewis and Clark, nor Astor, anywhere refer to it as Oregon.

Now as to the origin and meaning of the name Oregon. That, Sirs, has been puzzling the historians of Oregon and the entire Pacific Northwest for many, many years. One school fights for a French origin, the word "Ouragan," meaning storm. The other school says it's from the Spanish "Oreja," ear, or "Orejana," "big ears." Archbishop Blanchet, of Oregon, while in Peru many years ago, ran across the word "Orejon," meaning "slice of dried apple," which sounded good. Joaquin Miller fantastically suggested the Spanish, "Oye Agua," hear the water" (which we Oregonians listen for, sometimes vainly, during the summer fire season).

T. C. Elliott, Harvey Scott, Albert Hawkins, Lewis A. McArthur, and other experts on nomenclature of the Oregon country, have not agreed on the meaning and origin of the word Oregon. But they will be (those who are yet alive) exceedingly glad, I know, that the matter has now been settled by our Historical Researcher and so simply and so succinctly, shall we say?

LATE JULY IN W-O

(A coatless man sits at a desk in the draft of an electric fan. Awninged window to right, wide open. Continuous noise of riveting from the Electric Company's building, under construction, makes it necessary to shout every word spoken. The telephone rings - (barely audible above the clamor of the riveting machines.) Man (shouts) "Hello.....Major Stuart is in the West.......Mr. Sherman has just left for Colorado.......Yes, Mr. Headley will not return until frost.......Mr. Norcross has not returned from Europe but we expect.......No, Mr. Kneipp is in Montana........Yes, where it is cool.......You're correct, Mr. Rachford has gone to join him.......I'll be glad to write the Regional Forester at Missoula and find out about that. Mr. Morrell might know, but he is in the field........Now that is a matter on which Mr. Loving can give you full information. If you will hold the phone a minute I'll see whether he is still here - he leaves today for the Rocky Mountain Region. Central, please transfer this call to Mr. Loving's phone." (Hangs up phone)

(Enter, another perspiring employee.) "Say, the draftsmen are dripping on the tracings. The thermometer in there is a hundred and f......" (Man interrupting) "It is here, too. But this is the Department of Agriculture, where the weather is made. We don't close for heat. The Treasury has, and Commerce. They can, in times of business depression. But there is no relief for the farmers and foresters." (Exit other p.e.)

(Man grabs a dust-covered file of papers. Grumbles) "This ought to have been handled long ago." (Tries to concentrate. The riveting noise swells, and is reinforced by thunder. Enter stenographer. Her makeup has run, and the permanent wave is hardly a ripple. She sinks into a chair, ready to take dictation.) Man "Regnl Forster. The facts as given in your letter, considered quietly and coolly...(Stenographer faints).

YE EDITOR DISCOVERS

Chief Engineer Norcross has returned to Washington from an eight weeks' trip to Europe, where he went for the purpose of studying European methods of handling, estimating, and reporting water power and other hydraulic work. While abroad Mr. Norcross attended the Second World Power Conference at Berlin and the International Electrotechnical Commission meetings at Copenhagen, Stockholm, and Oslo. At the latter meetings an international agreement on the method of rating rivers for water power was reached. Mr. Norcross says that the method seems entirely satisfactory so far as it goes, but that it will require some extension to be comprehensive. He hopes to work on this matter within the next few weeks.

Mr. Norcross mentioned as some of the impressions he received from his trip: that apparently it was generally accepted that forest cover does have a beneficial effect on erosion and stream flow; that in some conservation lines other nations excel while in other lines the United States excels; that the amount of white water below dams was very striking; that he was much surprised at the large water flows in Norway and Sweden, at the cheap construction costs, and at the fact that the dams were not higher or more original in design; that the Forest Service and the United States generally could profit through following more largely the example of the nations visited in constructing buildings for permanency; that the cleanliness and orderliness in Berlin and Scandinavia were outstanding and extremely pleasing; and that the practical absence of billboards along the roads and elsewhere constitutes one of the main reasons why many Americans believe that European scenery surpasses that in the United States.

- - - - - - -

Dean Ferguson of the Pennsylvania State College Forest School was host to the Allegheny Section of the Society of American Foresters at the summer field meeting July 25 and 26. There was a large representation of the Allegheny Section members present, many of whom brought their wives and children to enjoy the outing. Members of the Washington office staff who attended were A. B. Hastings, G. T. Backus, F. H. Eyre, and Geo. A. Duthie.

The meeting opened with a get-together at the University Club on the evening of July 24 and disbanded at noon July 26 at Greenwood Furnace. The program consisted of inspection at State College of nursery and planting experiments and investigation relating to the merits of wood shingles, a banquet at the Center Hills Country Club, and visits to the Rockview forest nursery, State penitentiary, Pleasant Gap fish hatchery, Logan State forest, Penn State Nature camp, and the Greenwood Furnace forest nursery.

- - - - - - -

Two plots with similar densities of young longleaf pine in South Carolina were established in 1916. One plot has been completely protected from all fire and one plot has been burned over every year. Preliminary analysis of the data by the Appalachian Forest Experiment Station indicates that in the 13 years which elapsed, the wood production on the burned plot has decreased 2400 cubic feet, or approximately 200 cubic feet per year. There are now 666 trees on the unburned plot and 465 on the burned one.

A comparison of soils from other similarly managed plots in the longleaf type in South Carolina made by Dr. C. R. Hursh of the Appalachian Station indicates that the burned soil has a lower organic content, a lower moisture content, and a lower water holding capacity.

- - - - - - -

In the July 28 issue of the Service Bulletin R. M. Nelson, of the Appalachian Forest Experiment Station, who received the Ph. D. degree from the University of Minnesota in 1930, was through error listed as a member of the Forest Service. Dr. Nelson is a Forest Pathologist of the Bureau of Plant Industry.

WESTERN YELLOW PINE METHODS OF CUTTING

Seventeen permanent sample plots, with all reserve trees tagged for periodic remeasurement and with many small reproduction quadrats, form the basis of the field work for this study. These plots range from 8 to 50 acres in size and are located on four National Forests in eastern Oregon. The earliest group of plots established are now fifteen years old. The records on growth and survival for these plots are now being prepared for publication. The analysis of the fifteen annual reproduction records emphasized the importance of giving every protection to the young growth at the time of logging and slash disposal, as the complete stocking of the area by new seedlings is a slow process even on the more favorable locations of the region. These records were made on three sample plots of 15 acres each which had been logged so as to leave 15, 25, and 35 per cent of the original volume in the reserve stand. The reproduction established by these trees the first year after logging, when the seed produced by the full stand was effective, amounted to 2076 seedlings per acre on all plots. Five years later the total number of seedlings per acre alive dwindled to 1451, and at the 10-year period to 1072, but at the fifteen-year period the loss was offset by new seedlings so as to increase the total to 1106. It is significant that of all the seedlings recorded on the area since cutting, 74 per cent germinated during the first two years when the full stand was still an important source for seed. - From "A Digest of the Report of Investigative Committee R. 6 and Pacific N. W. Exp. Sta."

PINE CONE IS BLAMED FOR MAN'S DOWNFALL AND NOT THE APPLE

COPENHAGEN - The downfall of Adam in the Garden of Eden was caused by a pine cone and not by an apple, scientific research published by Dr. Ditlef Nielsen, contends.

The Danish scientist after investigations, reached the conclusion that Eve did not hand Adam an apple but that she gave him an Asiatic fruit called Peri, which is now known as a pine cone. Neilsen discovered a picture which he said was made in early Babylonian time and which showed Adam and Eve under a pine tree with a pine cone. - Clipped

- - - - -

A special appropriation of $25,000 for relieving unemployment, was allotted to the Department of Conservation of Massachusetts by Governor Allen for a period of five weeks during the spring months. More than 300 men were given work on 25 of the State Forests brushing our forest roads, thinning woodlands, making release cuttings and plantations, and clearing brush land for planting. - Pa. Dept. of Forests and Waters Service Letter

- - - - -

"The City of New York, with her thirty-four inch timbers has proved herself to be a very stanch ship, for she has stood many terrific blows from jagged ice edges.

"It is remarkable that a wooden ship built in 1882 could be so well preserved. She can certainly withstand great ice pressure, and considering her low horsepower and very small size, she has far exceeded our expectations."—Richard V. Byrd.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER

Theodore Roosevelt

VOL. XIV No. 33 WASHINGTON, D. C. AUGUST 18, 1930

FIGHTING FUTURE FOREST FIRES FROM THE AIR

By William R. Kreutzer, Colorado

How will we fight forest fires in the next twenty-five years? Will aircraft take the place that it should?

When the writer was a small boy his father fought forest fires in the Rockies of Colorado with axes, mattocks, hoes, rakes, and saws, by clearing fire lines and trenches; and by beating surface and grass fires out with wet gunny sacks. We are still using these tools and the olden time methods slightly improved to fight our present-day forest fires.

Years ago there were few tourists in our western mountains and very seldom did we find a cigaret smoker in the wooded regions. Now there are thousands of tourists in the timbered regions of our National Forests. Many of them, of course, like to build camp fires, and smoke cigarets as part of their recreation program while in the mountains. Our common fire hazards have, as a consequence, multiplied enormously.

It has been well said that "A fire-proof forest demands one hundred per cent public cooperation in this Region."

Restrictions have been made against the use of open camp fires, and in some places smoking has been prohibited by timber operators amongst their laborers at work in the woods. In the future, in order to reduce the fires caused by smokers while in the woods it may become necessary to prohibit open smoking in the National Forests during extremely dry periods. In this event the cigaret will undoubtedly be barred and pipes will have to be equipped with effective spark arresters or covers.

While some restrictions are being tried out with the hope of lessening the destructive forest fires which have been so common, there is a definite and crying need for better methods for bringing forest fires under control more rapidly than appears to be possible at the present time.

At a Supervisors' meeting held in Denver along about 1912 the writer, while discussing telephone lines, trails, and lookout improvements, made what might at that time have been considered a radical suggestion. He suggested the development and use of airplanes, airships, and wireless telephones in connection with the detection and suppression of forest fires and for other administrative work on the National Forests. This suggestion was supported by Mr. Fred Plummer, Chief of Geography, of the Washington Office. It is noted that airplanes are now actually being used by Regional Forester Tinker in the detection and suppression of forest fires. It is exceedingly gratifying to note that the airplane has found a place in National Forest fire work.

In 1927 the suggestion was taken up with Area Coordinator Hennessy of the Eighth Area, at the meeting of the Fort Collins Federal Business Association; and under date of April 27, 1929, Mr. D. C. Bascom, as Secretary, and the writer as President of the Federal Business Association of the Fort Collins Zone made the following suggestions to David H. Biddle, Area Coordinator, Eighth Area, Fort Sam Houston, Texas:

"Under paragraph 9(c) of this report, the following comments and suggestions have been made: 'Extending the coordinating service to new lines of work!------Larger attendance at meetings will help acquaint all with possibilities of cooperation. Aeroplane service in scouting forest fires; Bureau of Chemistry to find out cheap and effective chemicals to extinguish crown fires in forest--to be worked out in cooperation with the U. S. Forest Service. It is believed by local Forest officers that forest fires may be extinguished in the future by the use of aeroplanes and chemical bombs. At present the old methods of cutting control lines by hand (i.e., axes, saws, and other fire tools) is being followed, but is slow, expensive, inefficient and should therefore give way to more scientific methods as soon as such methods can be worked out. It is recommended this problem be presented to the Research Divisions of the Bureau of Chemistry, U. S. Aero Service, and U. S. Forest Service, and that experiments be conducted along these lines."

Chemical smoke or gas screens produced by bombs or other means of discharging chemicals, or chemicals in mixture with water, released from airplanes or other aircraft, it seems, should be given more serious consideration. They should be thoroughly tested with the view of finding some cheap and effective process that would prove satisfactory in the use of airplanes in reducing or extinguishing crown fires and surface fires or the ordinary forest fires which are still very difficult and expensive to bring under control.

The writer has hauled water in barrels on a Dodge truck used in extinguishing surface and ground fires along the control line cut around a forty-acre forest fire at Pactolus on the Colorado. Water was also hauled by this method and used in putting out burning stumps and snags and smouldering logs, etc., inside the fire area. By using the back-pack pump or a sprinkler nozzle the water was economically and efficiently used.

The opportunities of the foresters of today for experimentation, research, and the invention of better methods for fighting, controlling, and extinguishing forest fires are everywhere clearly apparent. Let us look forward to some real advancement along these lines.

NOW AND THEN ON THE WICHITA

By Charles Allen, Wichita

Cooperation with War Department. Fort Sill, 22 miles distant. Air Corps students out on the Wichita for some practical experience. Iron winged beetles buzzing overhead. Out to a temporary landing in the hay field. Soaring down with the ease and grace of sea gulls. Striking the ground and getting some jolts on occasional rocks, but setting pat and feeding gas until necessary momentum gained and then off in the air again.

Night flying, of course. A flock of them in precise formation, with head, tail, and side lights making attractive red holes in the dark sky.

An observation balloon out on Quanah creek, attached to a mile of rope, leisurely crawling up into the air, with its tiny man burden, dangling from the end of a long rope.

Artillery squad also in the game. Not so inspiring as air boys. On a walk 2½ miles out, at Panther Creek. Negros astride sleek, well shod mules, dumbly cursing and grumbling and tugging at ropes attached to other mules, being led to water. Apparently helpless at even so menial a task, but for a busy and energetic officer on a spirited horse, riding the line and shooting orders.

On the way to Panther Creek, a coyote crossed the highway one hundred yards or so ahead. Slinking, stealthy tread. Familiar sideswing of head. A human sighted and pace increased to a high knoll on the prairie. Considered safe he stopped, sat down on haunches. Alert ears went up and keen eyes looked curiously back.

On a mile farther and a surprise in wild turkey flight. Had always thought that, when it came to air travel, the wild turkey was a flop. At least had only seen them flop awkwardly from ground to roost in tree tops. This one was quite wild. He'd not had the taming influence of grain at Headquarters. Sighting the intruder he took a swift run to gain momentum, quickly flapped up to a good sailing distance, soared a ways, flapped again, and soared some more. Beautiful flight of perhaps a mile, then to the ground.

Two burly soldiers, heavily shod and wearing helmets and rain coats, stood in the open door. Under an arm of each was a tiny, delicate, four legged creature, with spotted coat and big, dark frightened eyes. Air was sniffed with dainty, black noses and frail little bodies trembled in fright.

"Picked 'em up out on the road," one soldier said, edging through the door, with a broad grin, then stopped and waited expectantly for the big thanks.

Mother deer don't usually hide day old babes on a public highway.

"Better take them back and see if you can find out where they were picked up, hadn't you Earl," Mr. French said.

Earl was a little doubtful. "We'll try it," he said, "but there's a chance that the mother deer will get suspicious and not come back after them."

The expectant smile on the soldier's face fizzled out and changed to a glum frown of disappointment as he followed Ranger Drummond out of the office.

Great sight at Lost Lake June 1. First open day on fishing. An army of eager, expectant anglers, numbered by thousands, commenced swarming in the night before. Proof enough that so simple a thing as a concrete dam in a setting of oak forest and boulder piled mountains may produce a greater drawing card than gilded movies and expensive ball parks.

A walk on a winding road through an oak forest. A sound resembling a giant sniffing through a megaphone. Mother deer and fawn bounding off through trees, with frightened eyes ahead and rigidly erect, white tails behind. Some distance off, the mother deer's graceful bound was reduced to a swift, business like trot, while the fawn kept bounding on by her side.

A handful of salted pecans thrown on office porch. Three squirrels quickly to the feast. Rich morsels eagerly grabbed up and carried away. Next day, three little beggars were crawling all over screen door, looking inside and trying to make their request known, with curious expression as of half baked ideas struggling to surface.

PROGRESS MADE IN FIRE FIGHTING EQUIPMENT

The progress made in the development of fire fighting equipment has been quite striking in the North Pacific Region. The Annual Investigative Report of this Region describes the results obtained from several different kinds of equipment. The report states as follows:

A small two cylinder, two cycle Vaughan caterpillar tractor which is manufactured for light cultivation or plowing, was tried out. It is a much more powerful tractor than previous models, develops 9 horsepower, weighs about 760 pounds, and costs $355.50. Rigged with a specially designed plow it made from 2 to 2½ miles of fire line per hour under average conditions within the yellow pine type on the Deschutes Forest. It plowed up a 37 per cent slope, climbed a 47 per cent slope and built line across a 45 per cent slope. Preliminary tests resulted in a few alterations and the purchase of one tractor which was later used to excellent advantage in actual suppression work. On the basis of results obtained, it is planned to purchase 8 or 10 similar tractors for next season when they will be tried out over a much wider range of conditions.

A light knockdown three wheel plow weighing about 125 pounds was built and tried out on the Deschutes and Fremont Forests. It can be used as a trailer behind a car, with one horse or under favorable conditions with man power. Good results were obtained but more experimental work along this line is desired before drawing definite conclusions.

Ten very light "V" hand scrapers, with a detachable rake handle, were made up from discarded gang saw blades at a cost of $3.40 each and distributed for trial. The tool appears to have good possibilities but requires further investigation and test.

In regard to snag boring equipment, tests were made with a Home Light 600 watt gas electric plant which gave fair results but was awkward and subject to excessive drop of voltage under heavy load. A new Westinghouse Portable Gas Electric Power Plant is being assembled in accordance with specifications and will be received in a few days. This plant mounted on sub-base weighs 110 pounds and can be separated into two units for packing. It is believed that this plant will be well adapted to demands and capable of operating two drills on short leads or one drill on a long lead. It will be thoroughly tested as soon as received and, if satisfactory, a limited number will probably be purchased for trial during the coming season. Several types of drills and bits were tried out. Difficulties in overcoming objectionable features in flexible drive drills will probably result in abandonment in favor of electric drills. Further investigation and tests, however, are needed before drawing definite conclusions on this equipment.

In regard to lights for night work, a new Barney and Barry electric headlight was tried out and proved so satisfactory that we believe it will to a very large extent replace all other types of lights which have been used for night work. Over 900 of these lights were sent out to field forces where they were extensively used both for travel and night work on fire lines. Reports indicate universal endorsement.

MORE SERVICE TO CLIO

By H. O. Stabler, R. 7

It is very true, as pointed out by Mr. MacDaniels in the issue of July 7, that wardens of one kind or another have been authorized by Colonial or State laws since the days that it was or appeared to be necessary to control the toasting of witches or the too public and prominent petting of John and Priscilla.

I now rush into print - if the editor grants the privilege - to correct Mac of an apparent misapprehension. Incidentally, I wish to set Lady Clio straight. The article in the March 10 Service Bulletin opens with the statement, "Time was when the warden system of fire prevention, detection, and suppression now in use (underscoring is mine) or fast being adopted on the Eastern National Forests, was quite as visionary ...." The phrase, "the fire warden idea was really originated" refers to the voluntary warden system that was as far as we know first organized and put into use on the Shenandoah Forest. As pointed out in Mrs. Gordon's article, "the problem was how to secure the cooperation of a community accustomed to burn the woods each year to improve the grazing and to help the huckleberries along." There followed the selection of community leaders, key men if you will, who in turn selected the members of their warden crews, and this system has been carried out and expanded to the present day with the result that to the wardens and the people generally the Shenandoah is in fact "our Forest." The warden system was designed to suppress fires when they occurred, but the primary object of the one who designed it was to PREVENT fires from starting, and that it has measurably accomplished.

When I came in contact with the Eastern Forests in 1914 I looked upon "warden" as merely another name for "per diem guard" or "citizen cooperator," but there is a difference - there is and has been a spirit of public service in the voluntary warden crews of the Shenandoah that is unique in the Forest Service. We feel sure that if circumstances required it the warden system of the Shenandoah would take care of fire control without remuneration. (For the benefit of those who may not have read the "Beginnings of the Fire Warden System" in the Service Bulletin of March 10, it should be said that the wardens and the members of their crews are paid the regular fire fighting wage when actually engaged in fire suppression.)

IMPROVEMENT IN WEATHER FORECASTING PREDICTED

According to H. H. Clayton in a publication just issued by the Smithsonian Institution entitled "The Atmosphere and the Sun," the weather from day to day is not a haphazard occurrence, as many persons believe, but is subject to calculation, and the calculations will in the future be made with increasing accuracy for weeks and perhaps months in advance.

"If the conclusions presented in this paper are verified and accepted by other research workers, as I feel they must be in time," says Mr. Clayton, "it will mean a revolution in present methods of weather forecasting. The forecasting of pressure and temperature will be made in much the same way that ocean tides are now predicted, except that the periods used will be solar periods rather than lunar periods and will need to be treated in a special way owing to changes in phase and amplitude. Processes will be simplified and machinery like the tidal machines will be introduced in order to handle the immense amount of data which will be needed for world-wide forecasts, or even for forecasts over a large area like the United States."

The results of twenty years research on the relation of the sun's activity to atmospheric changes are condensed in this publication into 49 pages. Complicated pulses of the sun's radiation occur both as long-period changes in terms of years and also as shorter variations of only a few days duration, as shown by Dr. C. G. Abbot and his associates in the Smithsonian Astrophysical Observatory. The pulses in the sun's radiation, Mr. Clayton shows, are attended by variations in atmospheric pressure, which increase the contrasts in pressure and speed up the circulation of the atmosphere. When solar activity increases, the pressure falls in the equatorial region, rises in middle latitudes, and falls in the polar regions. The regularity of these changes is interfered with by the distribution of land and water and by the seasonal changes, so that the rate of progression of the atmospheric waves is greatly complicated.

Mr. Clayton's method of forecasting is by means of these periodic vibrations in the sun and atmosphere. An analysis of such periodic terms in the weather at any point on the earth would make it possible to project the periodic terms ahead to any length of time desired. Unfortunately there are variations in the amplitude and phase of the periods, and it is therefore necessary to redetermine the periodic terms at short intervals and to limit the time in advance which they are made to cover. When these inversions and displacements in the periodic term become calculable, this method of forecasting will, Mr. Clayton thinks, probably replace all others. Already considerable progress has been made along this line. - News Release of the Smithsonian Institution

GAMBEL OAK SUITABLE FOR FENCE POSTS

An investigation to determine the durability of our western oaks when used as fence posts compared to the so-called durable wood species such as cedar and juniper, conducted in the Southwest by Consulting Pathologist W. H. Long, has proved white oak, especially the Gambel oak, to be a valuable species for fence posts. This discovery makes possible the use of a new species of wood for posts, since oaks in the past have been considered inferior for such purposes.

Thousands of fence posts at altitudes ranging from 5,000 to 8,500 ft. elevation were examined. It was found that sound white oak posts, especially the Gambel oak, when set in the ground green and unpeeled would last from 25 to 40 years. Gambel oak in the southwestern United States is found at altitudes of 5,000 to 9,000 ft. in a region where many large ranches and farms are located and is of a size suitable for posts. The use of this wood for posts will therefore save thousands of dollars annually to the farmers and stockmen of the Southwest, since it is usually found right at hand, is easily cut, and does not have to be hauled any distance. - Region 3 Annual Investigative Rpt.

YE EDITOR DISCOVERS

Professor Edgar W. Knight, Ph. D., of the University of North Carolina, recently addressed the Phi Delta Kappa Fraternity at Columbia as follows:

"The manufacture of Ph. D's. has become a major academic industry of the nation.

"Nearly all American colleges set up the Ph. D. as a requirement which every one who aspires to a college teaching position must meet. It follows, naturally, that the graduate schools producing college teachers must produce Ph. D's.

"When the Ph. D. virus gets into a young man's blood it is likely to ruin him for life. The medieval system of producing Ph. D's. leads the hapless victim to believe that he is flying to the world with an important message.

"His professors, themselves infected with the virus, assure him that his message is important. Thus the young man falls into the fatal error of taking himself seriously. With his Ph. D. written in bold type he assumes the responsibility of college teaching with the thought that he is quite an important person.

"We cannot expect good teaching in our colleges until they begin to employ as instructors men and women who are interested in the fascinating pageant of life of which they and their students are a part.

"As a matter of fact, the average young Ph. D. simply is not ripe enough to contribute to knowledge. He is not seasoned enough to have acquired wisdom. The Ph. D. process has, in most instances, robbed him of the opportunity of acquiring it."

Seems like some of our fellows could show this man up for the benefit of Bulletin readers.

- - - - - - -

The Forest Service library in Washington had on its shelves on June 30, 1930, 25,764 books and pamphlets. Of this number, 904 were added during the fiscal year, while 778 were discarded or transferred to the Department. The net increase for the year, therefore, was 126 volumes.

- - - - - - -

In a study of fire damage at McNeill, Mississippi, Dr. L. J. Pessin of the Southern Forest Experiment Station, found that the soil on annually burned plots was five times as impenetrable as on unburned longleaf pine land. Trampling by cattle (one steer to 7.5 acres) apparently affects penetrability of the surface soil layer about as much as does fire, while the combined effect of annual fire and grazing is nearly three times as great as either fire alone or grazing alone.

- - - - - - - -

The rapid destruction through erosion of cultivated lands in Mississippi is an important factor in farm abandonment, and the only remedy seems to be through the restoration of forests, according to G. H. Lentz, of the Southern Forest Experiment Station. Under his direction detailed erosion studies have recently been completed in six counties in the State and general observations have been made in 10 or 12 others.

OSTLIN WRITES OF FORESTRY WORK IN SWEDEN

Excerpts from letter written to E. L. Demmon from Eric Ostlin, formerly a Scandinavian-American fellow, who is working on the Forest Survey of Sweden, dated June 20, 1930.

"Here in Sweden we are not used to hot weather, so the Gov. has been so foresighted as to prescribe only 5 1/2 hours work a day during June, July, and August.

Among other things we are now trying to explain why we came to a much higher figure for a Province (Varmland) than was arrived at during the first cruise in 1911.

Experts think the climate has changed and become more favorable - other people think that the first survey was not carried out as carefully as it should have been --- All the same the field work is completed and we are now writing profound learnings to be derived from the figures.

You might be interested in hearing how much cash has been alloted for forestry improvements on private owned land:

For general work	$220,000
" forest ditching	$187,000

(A farmer who wants ditches on his forest land gets 40 per cent of the costs from this sum and does not have to repay the money.)

For planting or seed sowing on barren or cut over lands, $160,000 (Up to 50 per cent of the cost of restocking is paid by the Gov.)

For the purchase of land for community forests a loan fund has been founded $50,000.

Thus over $600,000 per year for forestry work on private owned lands.

LAND PURCHASER EXAMINATION

The Civil Service Commission has announced an examination for Land Purchaser. The duties of this position are: to assist the Senior Land Purchaser in such activities as the classification of private lands; the appraisal of individual tracts of private land under classification upon which to base negotiations for purchase; to examine titles and render expert testimony on condemnation proceedings. The salary range is from $3800 to $4400 a year.

Applications must be on file with the Civil Service Commission at Washington, D. C., not later than September 3, 1930.

FERN LEAF SALES

By F. W. Cleator, R. 6

A flurry was caused in Lands in early May by reason of certain applications for privilege of exploitation of fern leaves from a National Forest. For a time it appeared that it would be necessary to handle the matter under the instructions in Lands Handbook, page 159c, regarding Policy for Picking Flowers, Gathering Plants, etc.

After some struggling about, hunting up stumpage prices, etc., on various and sundry unusual products of the forest, we stumbled upon Reg. S-21 of the Manual, which takes care of such commercial sales very nicely.

One Forest has already handled this and similar business under S-21 which helps not only as a precedent but in details of administration. It appears that only first-class fern leaves are used and these are refrigerated and sent eastward or southward at seasons when those regions are out of green stuff for decorations. The picking is said to benefit instead of injure the plants, being mostly done after maturity. so that new leaves are more perfect.

The units of measure are the bunch (50), the crate (1,000) or the truck load (maybe 10 crates). The picker gets about 5 cents per bunch, to $1.00 per thousand. and a vigorous person may make $5 to $10 per day. Inspection is rigid and allows only perfect leaves. A crate is worth about $3.75 packed, f.o.b., railroad. Government stumpage will doubtless be about 10 cents per M.

While the office of Lands does not take part in the administration of such sales, and should be interested only to the extent that highway borders are not despoiled, still we cannot but be interested a little as to the methods of scaling, etc., that will be called for. A wide-awake officer could likely sit at the Forest boundary and check the material as it emerges.

Incidentally, Reg. S-21 is quite an elastic and interesting Regulation if one has sufficient imagination, and follows out its maximum possibilities.

MR. BROWN RETIRES

The head messenger, with twenty-five years of creditable service, retires this month. Those who have been in the Washington office since the days of G. P. and Overton W. Price, when Henry D. Brown joined the ranks, can bear witness to the "creditable service" which did its part in building the Service of which we are so proud. Sincere, honest, never late. always on the job. firmly doing some disagreeable jobs such as checking up tardiness. always anxious to help get the work done, Mr. Brown has seemed a reliable fixture of the day to day life in the Atlantic Building. The best wishes of all go with him.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
> Theodore Roosevelt

Vol. XIV No. 34 Washington, D. C. August 25, 1930

WHY PUBLIC RELATIONS?

(Excerpts from a memorandum by Regional Forester Rutledge to
new and prospective members of the Forest Service family)

Public relations, as construed in the Forest Service, is the tie between this organization and human beings outside the organization. Originally, good public relations consisted of being civil in dealing with customers or users. Later, it meant also taking advantage of opportunities to explain the work of the Forest Service. Now, public relations is extended to include the creating of opportunities to familiarize the public with the forestry problem.

But why should foresters whose profession has to do with trees be concerned about public relations? A study of activities of Rangers showed that for every job dealing with trees, two had to do with human beings. If this holds on a ranger district, how much more does it apply in the Forest Service as a whole?

Forestry in the United States has not spread of itself but has been spread by education and it will continue to be spread in proportion to foresters' ability to familiarize leaders with the forestry problem. Our forest land nearly equals our improved farm lands in area. Yet, Federal appropriations for forest research are only about one-tenth those for agricultural research. Will the Bureau of the Budget or Congress increase appropriations for forest research unless they are convinced that the need is real? Who will convince them? Can foresters convince them by merely telling them there is a need, or will the convincing entail careful organizing of facts?

Our National Forest program includes the application of forestry to the four-fifths of our forest land which is in private ownership. Will foresters help solve the problem by merely practicing forestry on areas under their jurisdiction, or should they show that 340 million acres of private forest land are subject to destructive exploitation? Only two-thirds of the forest area has organized protection. The forester cannot escape the responsibility of getting the other third protected and this means public relations. Man-caused fires are a menace that no forester will minimize. Yet, fighting fires will never solve the problem. The problem is one of education and a stupendous one when we realize that visitors on National Forests and National Parks have increased from 3 million in 1917 to 31 million in 1929 - an increase of over 1000 per cent.

Most of the Western States have within their borders several million acres of range land with no administration. To secure full use for the States of this now unknown but tremendous and continuing creative energy, necessitates dealing with statesmen, as well as with grass. It may mean dealing, for several years, with men controlling the destinies of the States, before dealing with grass.

The Forest Service has 26,000 stockmen as permittees. Does anyone believe for a minute that a Ranger deals mainly with grass, or must he be equipped to gain the confidence of his permittees? The most capable Ranger is the one who can do this effectively.

Thus it will be seen that foresters and forestry have to do with human beings, as well as with trees, and foresters must be equipped for successful dealing with human beings as well as with forest resources.

Public relations in the Forest Service has many ramifications. It cannot be delegated successfully to a staff of public relations men. It is something that has to permeate the entire organization. The Forest Service was born in adversity and has repeatedly been bitterly attacked. The most bitter and forceful attacks cannot always be frustrated by the public relations work of the Forester in Washington, or by the Regional Forester's office. It is the bulwark of good will and respect built by cumulative public relations work of the Supervisors, Clerks, Rangers, etc., that remains impregnable.

This cumulative public relations work so effective in defense is also powerful in extension or expansion of the forestry movement. Any forester preparing to enter the Forest Service may safely consider that no matter how well versed he may be in the technique of growing trees, he will be decidedly hardicapped if he is not also versed in the public relations phase of his profession.

OCCASIONALLY THE OTHER FELLOW LOSES

By E. A. Sherman

So often has Uncle Sam parted with valuable public lands for a mere song, so often has the purchaser promptly sold at 100 per cent or more profit, that it is somewhat refreshing to encounter an instance where the Government was not the loser. Recently the Service acquired by exchange four 160-acre tracts of virgin sawtimber in one of the heavily timbered National Forests in the Pacific Northwest at a valuation of $7.50 per acre. The four quarters have a stand of merchantable saw timber estimated at nearly twenty million board feet, or over thirty thousand feet to the acre.

Now it so happens that all four of these quarter sections were acquired from Uncle Sam originally as "Timber and Stone" entries at the old minimum rate of $2.50 per acre, the entryman also paying filing fees, advertising and witness expenses. Three of these claims were patented in 1908 and the fourth in 1910. At 6 per cent interest compounded the $2.50 per acre paid in 1910 would have amounted to $7.90 in cash in 1930, and the $2.50 paid in 1908 would have amounted to $9.00. But $7.50 per acre, after deducting taxes, which for twenty years or more must have amounted to a total cash outlay of not less than $5.00, would allow a final return of not to exceed $2.50. In other words, at the very best the entrymen in these cases got some of their money back after being out its use for over twenty years.

WEATHER WARNINGS

By L. D. Blodgett, Olympic

A number of blackboards are being ordered by the Hamma Hamma Logging company on the Olympic Forest, which will be used to post relative humidity readings daily at all lunch camps. The reading will be taken at 11-30 a. m. and 'phoned out to the various parts of the operation so that all can see it at noon. This will not only keep everyone in close touch with weather conditions, but, it is believed, will also stimulate interest in fire prevention.

THE RANGER STATION - DISTINCTIVE

By E. N. Munns, Washington

Ranger stations are as lacking in style as a poncho, and as uniform in their general appearance and make-up as the people who occupy them. The stations range from the log cabin style of architecture to the almost-modern frame dwellings. Some are painted, others have been. Some are placed among trees, and some withstand sun and storm unsheltered. Some have lawns, flowers, and grass, while photographs of the others have not been placed in the Forest Service collection. All have signboards of some kind, but few are alike. The combined result is that one can recognize but little in common between the ranger station of the Wenatchee and the Choctawhatchee, the Black Hills or White Mountains, except the flag that flies over each.

Is it, indeed, inevitable or desirable that ranger stations continue to be built and maintained without resemblance to one another? Or, should there be systematic effort to make ranger stations stand out so distinctively that they can be recognized by their general setting and appearance?

My inclinations are toward distinctive ranger stations! I further believe that distinctiveness and uniformity can be achieved with no loss, but rather a considerable gain, in dignity and beauty to the station. I also hasten to add that if really desired, these ends can be attained with little or no extra financial outlay. It will require only intelligent and directed effort, and time.

What are some of the ways by which this distinctiveness can be acquired? There are many, but only two will be proposed, and these should go together. The first method proposed may be termed the Natural Method, in contrast to the second, which may be called the Artificial Method.

We are foresters; our profession is forestry; we deal with forest produce of many kinds. What, then, could be more fitting for a station setting than trees: not a forest of trees or just trees, but distinctive and fitting trees, trees with character. There are such trees, several of them. Two of them I shall choose here to discuss because they impress me as particularly outstanding and desirable, either singly or, more preferably, together. Both are adaptable to a wide range of conditions. These are the blue spruce and the mountain ash.

No one can fail to be impressed with the blue spruce. Winter or summer, spring or fall, it is a tree that attracts attention. It is stately, it is dignified, it is a fitting emblem of one's calling. It is long-lived. And, should the ornamental variety not be fitted to the immediate locality, it may be possible to substitute another spruce without destroying the distinctiveness we wish to attain.

The blue spruce, in spite of its beauty, is a somber tree. In fact, some of its dignity is derived from that very somberness. But for the sake of the occupant as well as of the public, our stations need light, beauty, and color. This may be readily supplied by the mountain ash, for no matter what the season, the mountain ash lends color and cheer in any surroundings.

Would it not be possible by the artistic planting of a few spruces and ashes to attain a really striking combination that would serve to identify our stations? Merely planting the trees in any old spot will not give us what we want, the arrangement must be carefully thought out, and the trees planted to give a real setting to the station. We have now a number of nurseries: Would it be too much to ask the nurserymen to furnish the needed planting stock? And would it be such a terrible thing to ask the busy Ranger to plant and care for a few trees about a station?

The Artificial Method has already been tried but has locally failed, primarily because the proponents of the plan lacked artistic sense. This method of attaining distinction is through the use of standard paints. Previous attempts at standardization have been made by the Forest or by the Region, and if one is to judge from the results, it must have been that in some localities the color scheme indicated the condition of the Forest officer's liver.

Others looked like they might have been painted some Saturday night in pre-Volstead days.

Color combinations alone will make for distinction, but not necessarily for beauty, if the colors are not fundamentally harmonious and are not designed to blend with the surroundings. Furthermore, garages, sheds, fence posts, kennels, and chicken coops should not be treated all alike. If two colors are adopted for the dwelling, it may be desirable to use another combination on the barn, or to use for the fence post one of these colors alone or a neutral white. One mistake of past efforts has been to paint everything about the station the same sickening green or impossible pale pink instead of using harmonious colors. If a distinctive tree or trees can be agreed upon, then the painted house and other buildings should complete the setting. Someone with a real capacity for judging color values should study the possibilities and make suitable recommendations regarding desirable color combinations, taking into account not only the character and style of the improvements to be painted but their settings as well. Perhaps there are some in the Forest Service who have that delicate sense of appropriateness in color, but certainly few of those who have participated in past efforts can qualify. We have lived through some colorful nightmares and should now be in such a chastened spirit of mind that a fresh approach will be made only upon due consideration and with adequate advice.

If there is merit in the proposal and if there is need for this effort in distinction with a difference, then let us adopt officially one general plan, put it into effect, and stay with it everlastingly until we have made the appearance of our ranger stations something that adds to the standing of the Service in the public mind.

ALASKAN HOMESPUN

By W. A. Chipperfield, Tongass

After sending copies of our fire prevention regulations to my different loggers, there came to my attention the following letter from "Bob" (Paul Bunyan II) to his right hand man.

Friday.
"Near Craig, Underway
May 26, 1930.

"Dear Ed:

"Enclosed is Forest Service fire fighting regulations, second or third we got this year, so will not be any excuse if everything aint strictly up to snuff as regulations instruct. So as it was little early in season for George or me to attend to it yet, so see right away we have all those tools at yarder in proper places and in first class working order, do not put it off by all means. also don't overlook about watchman (noon hour). We pretty nearly burned up two-speed sled already. Suggest give the boys fire drill. Above all is very important so watch the weather, etc. - Bob."

You have to know "Bob" before you can get full kick out of his remarks. His outfit was considering buying a tract of timber last fall and here is the way he described the area to his home office:

"November 11, 1929

"We should apply for sale at Sea-Otter area instead of dreaming on paper about Halibut Harbor ocean-bleached, wind-cracked, eagle-nested, few scattering spruce all we can reach and unlimited amount defective hemlock. Very likely be some good spots at interior of island, only what good it does."

Note: Up to the present time we haven't sold this tract in question.

TONGASS
$2.00 STUMPAGE
$17.50 LOGS

After delivering an order of number one trap logs to a certain fish company, one of our logging concerns with which "Bob" is connected has the following transactions, via wireless

"Tyee, Als.

"S.R. May 3, 1930.

"Trap logs not first class, one main side log has big hump in middle, one head log shows cross sectional cracks six logs nineties and hundred twenties so crooked that they cannot be used in trap frame. Must be replaced, all of which are here as your property. At prices you charge we cannot afford to pay for such waste. - S. S. Fish Co."

Here's Bob's reply.

"S. S. Fish Company,
Tyee, Als.

"Account your previous slow payments and kicks, we had two experts (Bob was one) pick out your logs by your specifications and logs are first class. There are four about ninety foot logs with slight crooks was figured for short lengths and those you should be cut in two. We be glad take that full tow back intact way it was shipped. Suggest that if you change your dimensions you trap you send tug with man to pick logs to Ham Cove, Dall Island. Logs are seventeen fifty at camp and plenty logs here for that very purpose. Either way your check be very much appreciated with deliveries. - J. R. R."

Note: Bob reports no more kicks from this concern and check came pronto.

RADIO FIRE CONTROL

By J. R. Bruckart, Columbia

Plans for the experimental use of radio communication on the Columbia Forest this season are now being consummated and the actual work of installation of the central station is well under way. This central station will be manned by an experienced operator located at the dispatcher's office at Hemlock, where 110 volt direct current electric power is available. It will be a moderately powered station, capable of working over the whole Forest at all times. This station will be equipped to send and receive both code and voice.

Between 5 and 7 portable radio sets, equipped to receive voice and send code, will be allocated to different parts of the Forest. These sets will weigh about 75 pounds each and are designed so as to divide the weight into 3 units which will permit transporting either by pack-horse or back-packing by men.

The object is to determine the feasibility of using radio communication under actual forest conditions. Mr. D. L. Beatty who has been working on the development of radio equipment suitable for our use and who has developed the equipment to be used this summer, will continue the general experimental check of the equipment with the idea of ironing out a number of technical problems that yet remain to be solved.

CUT-OVER LAND CONDITIONS IN DOUGLAS FIR REGION

A study of conditions on cut-over lands in the Douglas fir region indicates that there are from 5 to 140, averaging 62, cords per acre of woody material larger than 3 inches in diameter and more than 3 feet long. This represents an average of 355 pieces of such material to the acre. In addition there are from 40 to 200, averaging 90, cords per acre branchwood and other material smaller than 3 inches in diameter and from 3 to 4 cords of rotting logs per acre. In all the ordinary acre of cut-over land has about 155 cords of woody debris of all kinds, excluding the snags and standing trees. A slash fire removes approximately 30 per cent of the volume of the larger pieces, depending upon the age of the slash and the severity of the fire. A heavy fire consumes about 95 per cent of the volume of fine material and a light fire about 50 per cent if fresh and 75 per cent if more than 5 years old. A reduction in volume comes about through burning sections from logs rather than through reduction of diameter. This results in there being 90 per cent more pieces of larger material after fire than before, and more short lengths. Cedar slash burns more readily than that from the other species, as some 40 per cent of the cedar slash volume will be consumed as compared with 30 per cent of the Douglas fir slash, 10 per cent of hemlock, and 15 per cent of rotten logs. The common ground cover following cutting in the Douglas fir region is bracken fern, and particularly does this fern come in on repeatedly burned areas. Studies indicate that there are some 1700 cubic feet of dry and green herbaceous plants on these burned cut-over areas with a weight of around 22,000 pounds per acre. The bracken fern loses about one-fourth of its volume and two-thirds of its weight upon drying. - R. 6 Investigative Report

YE EDITOR DISCOVERS

If you are unfortunate enough to contract poison ivy or poison sumac infection, it will be good news that applications of cooking soda, one to two teaspoonfuls to a cup of water, relieve the irritation. For curative effect, fluid extract of Grindelia, diluted with 6 to 10 parts of water, may be applied with a clean bandage which should be kept moist, according to Cornell Extension Bulletin No. 191. Ointments are not to be used until the poison has exhausted itself; lead compounds are dangerous. It is usually desirable to consult a physician.

In spite of the claims of poisoning without contact, numerous tests by recent workers on many individuals indicate that contact with the poisonous juice is necessary in order to produce the blisters and vesicles so characteristic in ordinary cases of poisoning.

As a protection before or after exposure to poison ivy or sumac, washing with a non-poisonous solution of five per cent iron chloride in a half-and-half mixture of water is recommended. Or wash with plenty of kitchen soap, but do not use oily soap, which may spread the irritation. Apply heavy lather and rinse, repeating the process several times.

To eradicate the plants, where it is obviously not practicable to plow or grub large areas, spray in midsummer with strong brine (3 pounds of salt to a gallon of water), or sodium chlorate or calcium chlorate solution, one pound to a gallon of water, and repeat applications if new shoots appear. If grubbing is resorted to, be sure to dig up the strong root stalks. Great care must be taken not to touch the plants.

Copies of the bulletin describing them and minute directions for eradication of poison ivy and poison sumac, also details of prevention and care for poisoning, may be secured by writing the New York State College of Agriculture, Cornell University, Ithaca, New York.

- - - - - - -

A work, play, and health camp for men over 18 years old was opened this month on the People's State Forest in the town of Barkhamsted, Connecticut. A nominal wage of $1 a day and board is given the men, who are informed, however, not to come to the camp with the primary aim of making money. The camp requires the men to work 7 hours a day, five days a week, weeding forest plantings, cleaning out woods roads, cutting out fire lines and assisting with Blister Rust Control work in the forest. Healthful outdoor work with vacation features and time for rest are provided, and the forest is improved. R. M. Ross, secretary forester of the Connecticut Forest and Park Association, who is in charge of the camp states that many more men applied than could be accommodated. The Association, public spirited citizens, and the State Forestry Department are defraying the cost of the camp.

- - - - - - -

The lightning storm study under way in the Pacific Northwest has disclosed a decline since 1927 in the number of storms. In 1927 there were 1,487 reports, in 1928, 813, and in 1929 only 517.

- - - - - - -

The Junior Range Examiner eligible list as it came to the Forest Service included 13 names. Nine have now been appointed as Junior Range Examiners and one was already under appointment as Forest Ranger. Regions 1 and 3 and the Intermountain Forest and Range Experiment Station each took one eligible. Region 4 took three, and Region 2, four. The names of the three remaining eligibles have been certified to the Indian Service for their consideration.

USES OF BUILDING PAPER TESTED

Two familiar national research institutions, the U. S. Bureau of Standards and the American Society of Heating and Ventilating Engineers, have been investigating the subject of building paper. The Bureau took pieces of the various commercial brands of paper on the market, tore them up, and noted how much of a pull they would stand when dry. Other pieces its busy investigators soaked in water and tore up to see what they might do on a house wall after a rainstorm and before they were covered by siding. With ingenious apparatus they blew air through still other samples and tested the resistance of these samples to moisture penetration, until they could say without question which types were best and strongest and which would most thoroughly shut out air and moisture from the interior of a house.

The heating engineers, on the other hand, wanted to know what these papers would do to a frame wall or roof in the way of excluding winter's icy breath. They built wall panels 6 ft. wide and 9 ft. high, using wood siding and sheathing boards, 2" x 4" studs and even wood lath and plaster as in an actual house. These panels were fitted to the wide opening of a huge square funnel, in which air pressure similar to that of a 30 mile wind was maintained by a motor driven fan. The air which leaked through the panel under this pressure was collected and measured by another similar funnel on the other side. Some of the wall panels tested had building paper in them; some did not; and the investigating scientists were able to tell just what the effect of a good paper would be on the sides and roof of a house.

It was found that building paper reduced the leakage through walls not so protected from 95 to 99 per cent, letting through in most cases only a hundredth part of the air which would have otherwise found its way into the walls.

Whether applied to shelter buildings or to residences of the highest class, results of the tests show, first, that with use of building paper, it is comparatively simple to secure a practically air-tight wall; and, second, that the reduction of air leakage with this consequent improvement of comfort, is far out of proportion to the minor cost of applying good building paper over wall and roof surfaces of almost any building. Even where weather temperatures are seldom extreme, it is usually desirable to exclude air borne dirt and dust, and from this viewpoint alone, in many parts of the country, careful application of building paper is indicated as worth while. - From National Lumber Manufacturers Ass'n. News Release.

PORTABLE BORING MACHINE POWER PLANT

By Clay M. Allen, R. 6

With the able assistance of engineers from the Westinghouse Company, R-6 has recently developed a portable boring power-plant, which is believed will prove to be very valuable for the quick felling of snags and for other forest purposes.

Following is a brief description of the plant: It weighs 118 lbs. can be divided into two units of about 60 lbs. each, consisting of a four-cycle, single cylinder, Briggs and Stratton gas engine and a Westinghouse D. C. Generator. Its length is 35 inches including skids and handles (plant proper 29 inches, 13 inches wide and 17" high).

It is rated as a 1 K.W. ($1\frac{1}{4}$ h.p.) but operated satisfactorily at a 50 per cent overload for short periods, during the tests made May 12. During these tests it ran two standard one-half inch heavy duty electric drills simultaneously, (connected with 500 foot lead wires of number fourteen B. & S. copper wire), with a total maximum boring speed of approximately 60 inches per minute, using 1-1/8 inch auger bits.

PRESS RELATIONS MAN BEGINS DUTIES

Roy E. Miller, recently appointed to have charge of Press Relations, arrived Monday from California to assume his duties in the Washington office. He is to fill the position formerly held by Charles E. Randall, who was recently promoted to be Editor in charge of Educational Cooperation.

Miller had a number of years' experience in newspaper and magazine work before entering the Forest Service. He is a graduate of the University of Missouri, and has taken agricultural courses in the University of California He will handle press releases and will also assist with radio information and special assignments.

NOTEBOOK LOST

A Forest Service notebook containing employment record for the last twenty years, notes on ranger examinations, and other personal notes has been lost by Mr. William E. Clarke, U. S. Veterans' Hospital, Walla Walla, Washington.

Mr. Clarke's name is not in the book, but he advises that the first item of the employment record reads:

"Office boy, C. S. Hollister Gro. Co., Newberne, N. C., 1910."

The book also has his record of employment on the Cascade and Columbia National Forests. Mr. Clarke would appreciate having the finder mail the book to him.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER Theodore Roosevelt

Vol.XIV, No. 35 Washington, D. C. September 2,1930

OUR OLD TIMERS - THE MAN WHO BEAT GIFFORD PINCHOT

By J. C. Kircher, R. 7.

Those of us who were fortunate enough to have entered the Forest Service in the days when it was bossed by Gifford Pinchot will never forget the high quality of his leadership, his enthusiasm which permeated the organization and which gave the ideals which we still retain and cherish, as well as his invincibility. Gifford Pinchot was a man you couldn't beat, yet we still have in Region 7 one of the few Forest Service men who "put it over on the boss."

In the spring of 1902, a young man decided to take up forestry as a profession. Just why he should have done this, the record does not show and possibly he will not tell. At any rate, he attended the ill-fated Cornell Forest School that spring and the following winter, and when the school was discontinued in 1903, he transferred his allegiance to Yale. In the meantime during the summer of 1902, he had secured a coveted job as student assistant in the Forest Service at a large salary - $25 per month - and had spent the summer months with a field party in Maine collecting working plan data. The thrills of camp life and good companionship in the north woods, no doubt made up for lack of pay. At least our student liked his experiences, for he came back for more and the following summer we find him in Nebraska at the Halsey Nursery drawing even a bigger salary check which went with his new title of Assistant Forest Expert.

It was at Halsey that he first met the Forester - Gifford Pinchot - who had come out to see what was going on at the newly established nursery in the sand hills of Nebraska. It was not only his introduction to Gifford Pinchot but also his first encounter, and, one ventures the guess, the only one in which the Forester came off second best. One evening someone suggested a target match with six-shooters, and our young student carried off the honors against the field including the Forester.

With this auspicious start, our student, who was none other than Herbert O. Stabler, present Chief of Operation in Region 7, continued his studies at Yale and secured a permanent appointment in the Forest Service as Forest Assistant on July 1, 1905. Since then, 25 years have passed, years full of stirring events in Forest Service history, busy years for Herbert as well as the rest of us, years with varied and interesting experiences and, above all, years of satisfaction with job and life. And still Herbert is going strong.

He started his work in those free and easy days when the system of National Forests in the West was only in the making and when the Forest Service had just emerged from the political wrangles in the Department of the Interior. Curiously enough, Stabler's first work in his new position was PR work in California. They did not call it that, it was merely Forest Extension, which probably meant largely spreading the gospel for the creation of National Forests, to which there was a great deal of opposition.

The following two years were spent in boundary examinations. He was one of Gifford Pinchot's corps of young eastern men who had scattered throughout the West, looking up timber stands on public domain with the hope of getting them into the National Forests before a possible ban on the extension of boundaries might come. Speed was necessary, yet good work was required. Though green, these men went at their work enthusiastically and to them is due in large part the existence of the chain of National Forests in the West.

This period of Stabler's Forest Service career might be termed his wandering days. There were no autos and few roads and the work was done on horseback, often with pack outfit on prolonged camping trips in the back country. His wanderings took him first to Nevada, where the present Toiyabe Forest was carved out, then through Arizona, New Mexico, and parts of Colorado, with a little work in Michigan. His most interesting trip, he says, was the examination for National Forest purposes of the White Mountain Apache Indian Reservation in Arizona.

Can you imagine this country, a half million acres or more, with virgin stands of western yellow pine, spruce, and fir untouched by the axe, with no settlements or roads and only a few trails, with a few roving Indians, a truly colossal virgin area such as we see no more now a days in our land of autos and radios. Of it he says:

"The end of June found the outfit of six horses and Adam, the packer, headed south a hundred miles from Flagstaff for the northwest corner of the White Mountain Apache Indian Reservation. In being assigned to make this examination I was extremely fortunate, in that it was one of the last, if not the last, of the examinations in the genuinely pioneer regions. There was lots of fine yellow pine with spruce on Old Baldy, and a scattering growth of Douglas fir. These species occur above 7,000 feet, and from 5,000 to 7,000 is occupied by juniper and pinon. The country was unspoiled by the settler and you could travel for weeks without seeing a white man. For that matter, you rarely saw an Indian in the northeastern part of the Reservation. No map was available, but the country was for the most part readily accessible for horses and water and grass were plentiful. Fish and game were easily obtained and at that time the entire year was 'open season.' The Boundary work in a country such as this was truly worth-while work and though in no sense forestry, it was after all the basis of our forest work in this country."

A spell or two in Washington on boundary work interspersed with some homestead examinations in the Northwest finished Stabler's roving days, and we find him near the close of 1908 popping up as Supervisor of the Columbia National Forest in Washington. Here he is attached to the spot for a while but in 1914 he is in on the birth of District 7 where he becomes first Chief of Lands and in 1918 Chief of Operation. From then on Stabler's wild west days are over and he has settled definitely - one is almost inclined to say permanently - in Washington and thrown his lot with Region 7. No more does he straddle the horse for months in the back country, nor carve out new Forests in virgin country. Those days are past. In place of the horse, the auto beckons, in place of the Wild West, the prosaic East calls and Herbert busies himself with holding the purse strings and increasing efficiency in Region 7. Twenty-five years of useful service he has given. We wish him a lot more of the same kind.

DO FIRES OCCUR IN MANAGED FORESTS?

By W. N. Sparhawk, Washington

The theory is often advanced that as soon as our forests are under reasonably intensive silvicultural management the fire problem will largely disappear. Germany proves it: German forests are managed; Germany has no fires. Q.E.D.

The official 1928 forest fire statistics for the State forests of Prussia [Zeitschrift für Forst- und Jagdwesen, March, 1930.] are interesting in this connection.

In that year, 880 fires burned over 8,144 acres of forest land, classified as follows:

Stand entirely or mostly killed:	Acres
Oak and beech	66
Pine	3910
Spruce	443
Stand injured, but not badly enough to cut	952
Ground cover burned, timber not	2773

The average fire thus covered 9.25 acres, but in one district the average was 82 acres. March was the worst fire month, with 40 per cent of all fires, followed by April, 15 per cent; May, 14 per cent; July, 11 per cent; September, 7 per cent; and June, 6 per cent. The only months without fires were January and December. The causes of fires were as follows:

	Per cent
Carelessness (campers, smokers, brush-burning, lumbering, etc.)	52.9
Railroads and motors	8.1
Incendiary	4.3
Lightning	0.4
Unknown	34.3

Here is the point: The Prussian State forests are all under fairly intensive management. They cover an area of 6,079,000 acres. Our own National Forests cover 26.3 times that area. If we had had as many fires in proportion to area as Prussia had, we should have had 23,144 fires instead of only 6,921 in 1928. Moreover, it should be noted that lightning was responsible for 46 per cent of our fires, while in Prussia lightning fires are almost unknown.

Still it must be admitted that intensive management probably does have some effect in holding down the area burned. With more than three times as many fires in proportion to forest area, Prussia burned only 0.134 per cent of her forest, while we burned 0.25 per cent of ours.

TREATED WOOD WINS OVER METAL IN FURNACE TEST

A safety wood which exhales its own fire extinguisher was recently exhibited by Prof. Albin H. Beyer of the Columbia University testing laboratories.

A 2-inch-thick door of the wood held back smoke and flames six times as long as did a metal-covered door. Tho protective moisture is a secret chemical preparation, Dr. Beyer explained, which is produced right on the skin of the wood. It is like glue and is made by the touch of the flames combining with chemical soaked into the wood.

The wet skin retards fire, which, however, eats it off slowly, leaving a charred black film. As soon as this top skin is eaten, though, a new layer forms underneath because the chemicals impregnate the wood completely. Only the topmost layer of molecules, said Prof. Beyer, are affected at any one moment. They explode at touch of flames, throwing out tiny sprays.

The test was conducted for Henry Klein, manufacturer, who invented the process. The metal-covered and the wooden doors were set in the sides of a large furnace, the flames licking their interior faces.

The metal-covered door quickly became untouchably hot, passing 100 degrees in about three minutes and passing the boiling point of water in about 15 minutes. The wooden door's exterior reached 100 degrees after about 30 minutes, and 150 degrees at about 45 minutes. It did not rise much above 200 until near the moment of burning through.

In the metal-covered door after 10 minutes smoke poured through the joints in heavy clouds and flames appeared. The wooden door held back both smoke and flames for a full hour until it was less than 1/8 of an inch thick.

Prof. Beyer said the duration of fire resistance depends partly on the amount of chemical absorbed, and that within one or two hours, resistance to flames may be fixed quite accurately in advance by gauging the amount. He said the door used came from wood processed for about four and a half months, first by air drying, then kiln drying, soaking, and finally air drying. – Clipped

ANY SEED TODAY?

By E. N. Munns, Washington

Europe has the silviculture, we have the sylva.

Generally speaking, Europe has relatively few forest tree species of real consequence. One species each of pine, spruce, fir, oak, beech, maple, elm, and poplar are about all that are worth while, though of course there are others of minor import. The European forester is interested in growth: he wants more and better trees; he wants more volume per tree; he wants more volume growth of good wood per acre per year. Our white pine grows faster than his yellow pine on many sites. Our red oak is better than any of his oaks. Our Douglas fir, western red cedar, and Sequoia are much better wood producers than any tree he has. Even our lowly box elder is used as a nurse tree for windbreaks on the plains of the Ukraine

The necessity for a trade revival in Europe and the present small profits are stimulating the desire for greater returns. Consequently, European foresters are seeking other revenues. Is dogwood valuable in Carolina? Perhaps it has a place in Roumania. Is sassafras a good tree in Virginia? It perhaps would thrive in Hungary. Is jack pine a good tree in the Lake States? Let's try it in Latvia. Is lodgepole a fine tree in Colorado? Why not also in Poland? Our persimmon is good in Arkansas; it may be better in Greece. So it goes! The point is this: If you can collect a small sample of seed of any one of the many that we have in the United States it can be used to good advantage in furnishing foreign foresters with something to try out in their arboreta and nurseries. The seed need not be from our best forest tree species – perhaps it would be of greater interest abroad if it were not. For example, our Monterey pine is of small moment to us, but a real forest tree in the antipodes.

There is more in this than just a mere unselfish attitude on our part to help other foresters. At the present time entomologists are fighting the fruit fly in Florida and pathologists the larch canker in New England. Both pests have been introduced here, and others will be. We should know more about the behavior of these foreign insects and diseases that come to our shores, to our own trees, and the best place to try it out is in the pest's own home and before it reaches us. One way to help is to have our own species growing at various places abroad. Do they become diseased? What pest is attacking them? What damages are caused? How can the trouble be corrected or controlled? Lessons thus learned through the other man's effort may repay many times over the time spent in gathering a few seeds. Seeds sent to the Branch of Research in Washington, will be sent to those most interested in countries to which the tree may be suited. With any such seed should be a statement giving full information as to species, location of seed source, where collected, size of tree, etc., etc.

OUR BIG TREE DEPARTMENT

BIG, BIGGER, BIGGEST

California is a big, wonderful State. It has, beyond doubt, the biggest trees, and the biggest many other things, including Native Son boosters. But when our big neighbor to the south sets up a claim to the biggest ranger district under Forest Service administration, as was done by E. W. L. in the June 2 Service Bulletin, we are impelled to rise on our hind legs and register a vehement protest.

Their Big Pine district, with its 924,845 acres, could be comfortably stowed away in one corner of the Prince William Sound district of the Chugach. We might almost hide it under one of our "biggest" glaciers.

Our Prince William Sound Ranger handles a district containing 2,540,353 acres, and as a sideline looks after the adjoining Katalla district containing 587,925 acres, or a total of more than three million acres. The Anchorage district of the Chugach contains 1,315,000 acres.

In the matter of livestock we are willing to concede something to our Big Pine friend in California. He has 30,000 sheep on his district, while our Anchorage district has but 1,000. We take it, however, that his are the domestic sort that are counted through a chute, while ours are Bighorns and the census is taken with a Springfield.

The Big Pine has a few head of cattle, some 2,000 or so. We have no cattle on the Chugach but can muster 500 moose, 400 deer, 5,000 mountain goat, and 3,000 bear.

If our friend from the Big Pine district will visit us during his next vacation we'll be glad to show him some "country." - L. C. PRATT

BIG--! LOOK AT THIS!

'Tis plain to see that friend Pratt is loyal to his own Forest. However, hearken to what the sea-going Rangers in Southeastern Alaska have to contend with in the way of "big country":

Craig Ranger District	-	1,330,000 acres - of land, not water.			
Sitka " "	-	2,573,000 "	"	" "	"
Petersburg " "	-	3,827,000 "	"	" "	"
Ketchikan " "	-	4,266,000 "	"	" "	"
Juneau " "	-	4,549,000 "	"	" "	"

Paraphrasing our well-known friend, Mr. Buick, "when bigger and better Ranger Districts are made, we will have 'em." - A Tongass Ranger

YE EDITOR DISCOVERS

Studies of fire and of fuels at the Pacific Northwest Forest Experiment Station have disclosed some facts of general interest. Among these are: that solid wood fuels such as logs, etc., dry to inflammability much earlier in the season than generally suspected, and these solid fuels stay dry until the beginning of the fall rains. The wetting effect of a hard rain on woody fuels is lost in a few days unless followed by cloudy, moist weather. Apparently, high humidity has little or no appreciable effect in increasing the moisture content of these fuels, once they thoroughly dry out.

A right of way was recently granted by the Secretary of Agriculture to the American Telephone and Telegraph Company of Wyoming for a telephone and telegraph line across lands of the United States within the Coconino National Forest, Arizona. The grant is for a period of fifty years and the line is approximately thirty miles in length within the National Forest. The company, in addition to paying for such timber as may be destroyed, is required to pay a flat charge of $50 per mile for the use of the publicly-owned lands affected.

- - - - - - -

Over 12,000 cattle and 100,000 sheep are killed annually on the National Forests by predatory animals and other causes.

- - - - - - -

Governor O. Max Gardner of North Carolina suggests, in an article appearing in the United States Daily, "How much better would it be if, instead of becoming 'tree-sitters' our boys and girls would become 'tree-setters' and thus contribute something to the beauty, livableness, and comfort of their homes!"

- - - - - - -

According to the London Times, the British Forestry Commission spent approximately $22,000,000 during the last ten years for land acquisition, planting, and development of forest workers' holdings. For the next ten years the Treasury has agreed to ask Parliament to make available $54,000,000. Great Britain is about equal in area to the State of Kansas.

- - - - - -

Material for publication in a new map folder recently submitted by R-4 raises a question as to whether R-5 is to be deprived of its cherished pre-eminence in one field of public land activity. The material contained a reference to the "mental" mines of Park City. Doubt exists as to whether this is purely a typographical error or whether the "mental" mine specialists of California are invading new fields.

MORE ON THE USE OF AIRPLANES FOR FIGHTING FOREST FIRES

Recently, while in conference with Mr. T. H. Sackett, President of the Mesa Air Transport Inc. of Grand Junction, Colorado, I discussed at considerable length the possibility of using airplanes for fighting forest fires. Mr. Sackett stated that on July 5 he discovered a small forest fire in the vicinity of the Bookcliffs between Rifle and Grand Valley. He lowered his plane to within about 150 feet of the fire. The fire was located on public domain outside the National Forest, had spread over about one acre, and was traveling up-hill. He stated he was quite sure he could have lowered his plane to from 25 to 30 feet of the flames. He could see the entire perimeter or outside line of the burning area. It was his opinion that he could have placed this fire under control from the air by means of some chemical or even by water sprinkled from a distance of 25 or 30 feet.

I have known Mr. Sackett for quite a number of years. He is an electrical engineer graduate of the Colorado Agricultural College; has had considerable experience in the mountains as a cattleman, and understands forest fires as well as prairie fires. He agrees with me that the proposition of fighting forest fires, particularly crown fires, is entirely possible by the use of airplanes.

While discussing the same question with Alvin Keyser of the Colorado Agricultural College, he stated that he would advise some experimentation by the use of carbon tetra chloride.

I have had a number of discussions with pilots and other airplane men and most of them seem to feel that the airplane will be used to good advantage for fighting fires. -

WM. R. KREUTZER, Colorado

ANNIE E. HOYLE RETIRES

By Daytonius, Washington

Everyone who reads Forest Service publications (and let us trust their number is greater than the authors, in moods of pessimism, are wont to believe possible!) is familiar with the name Annie E. Hoyle or her initials. Rare indeed is the bulletin or circular with line-drawings that is not, at least in part, "according to Hoyle." On August 31, 1930, Mrs. Hoyle retires after over 23 years of service, including five extensions of time since reaching retirement age.

Mrs. Hoyle was born 80 years ago on a small farm near Charles Town, West Virginia, and was educated in Maryland public schools and at the Louden Park Seminary in Baltimore. Her art education (which she herself would probably contend is still continuing) has been of exceptional breadth and thoroughness and has covered a period of seven years of intensive study and training at home and abroad. It may be said to have begun with instruction at Washington, D. C., in the Rouzee School of Fine Arts and private instruction under Jerome Uhl and R. N. Brooke, and continued at the New York National Academy and under George H. Story of that city. Two years were spent in Paris under Henri Mosler, at the Julien School, and the Louvre and Luxemburg. In London, England, Mrs. Hoyle studied human anatomy and anatomical drawing under Dr. Friend and at the Royal College of Surgeons, passed the examination for the Royal Academy, and worked in the British National Gallery. Mrs. Hoyle also has a thorough and practical familiarity with the requirements of commercial and newspaper art, in all branches of line-cut and color reproductions, especially as a result of her employment by The Lord Baltimore Press and Lowenthal & Criswell of Baltimore, and the Forest Service has frequently been the recipient of Mrs. Hoyle's knowledge and experience along these lines. Mrs. Hoyle also studied morphological and systematic botany under the late Mr. Joseph H. Painter of the U. S. National Museum and under Mr. Ivar Tidestrom of the Bureau of Plant Industry.

Mrs. Hoyle conducted an art school of her own in Washington for 30 years. Her specialties are oil portraits, still life, water colors, landscapes, and commercial art. She entered the Forest Service, with the status of a draftsman, on April 8, 1907, and on July 16, 1907, was appointed artist in Dendrology. Since January 1, 1917, she has occupied the same position in the Branch of Engineering.

Probably Mrs. Hoyle's best known work for the Forest Service was in connection with the late Mr. Sudworth's dendrological bulletins, beginning with "Forest Trees of the Pacific Slope." She has made upwards of 160 drawings of range plants for what is now the division of range research, all of which will no doubt eventually be published. Practically all the drawings in the familiar pocket manual series, "Forest Trees" of the various States, fathered by Wilbur Mattoon, are from Mrs. Hoyle's pen. Mrs. Hoyle also drew many of the illustrations, including the two paintings which serve as frontispieces, for Dr. Sampson's familiar textbooks, "Range and Pasture Management" and "Native American Forage Plants."

With the true artist's hunger for beauty, as vital as that of a Keats' or of an Athenian in the time of Praxiteles, "Mother" Hoyle is intensely human and practical, - as well as poetic and sentimental. She is no anemic, hemoglobinless, tabetic eremite. Big of heart and mind, as of frame, she is one of those who want to "live in a house by the side of the road and be a friend to man" (in the *generic* sense, of course!). Since its inception in 1922 she has been a member of the Washington office Advisory Committee and has been a friend and counselor of the "under dog." Like a Deborah she has sat in the gate, and to her have gone a continuous stream of the perplexed and harassed with their problems and grievances (real or fancied), nor has she failed to give a patient hearing to the neurotic and egocentric, of whom every office seems to have a quota.

The Forest Service can ill afford to lose Mrs. Hoyle. In a very real sense it has not, it can not lose her. In that exquisite essay on old age ("De Senectute") Cicero asserts:

> "Sed mihi ne diuturnum quidem quicquam videtur in quo est aliquid extremum; cum enim id advenit tum illud, quod praeteriit, effluxit; tantum remanet, quod virtute et recte factis consecutus sis."

In other words, there is nothing of senescence or mortality in kind deeds and in work well done, rather they are of the very essence of eternity. Annie E. Hoyle, the Forest Service will not forget you!

SOME RESULTS OF THE SANTA FE PLANTATIONS

The Santa Fe plantations were examined in June. The plantations demonstrate that with good stock, and with careful handling, Douglas fir and Engelmann spruce can be successfully planted under aspen. About 80 acres planted in 1918 and 1919 are satisfactorily stocked with Douglas fir 3 to 4 feet high and Engelmann spruce 2 to 3 feet high. On the same area are about 40 acres planted in 1920 with stock which was originally good, but which deteriorated because of delay in transportation. The results here were poor. On another area planted from 1911 to 1913 with overgrown seedlings, the survival is only from 10 to 15 per cent, and the trees are smaller today than those of the 1918-1919 plantings. Other plantings between 1910 and 1917 gave poor results because of poor stock, poorly selected sites, and in some instances, careless planting. It should be stated that although the early plantings were largely failures from a research point of view, in that too many uncontrolled elements entered to permit drawing conclusions on the problems under consideration, the results from an administrative standpoint are fairly satisfactory in that some 200 to 300 acres of aspen which was practically devoid of conifers now has around 100 planted Douglas fir or Engelmann spruce per acre.

The porcupine is beginning to work in these plantations. Poison blocks have recently been placed by District Ranger Rogers. - From R-3 Investigative Report.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol.XIV No. 36 Washington, D. C. September 8, 1930

STATUS OF THE ALASKA PAPER MAKING PROJECTS

By B. F. Heintzleman R. 8

It is interesting to note that two more branches of the Federal Government, namely, the Senate and the Federal Trade Commission, have recently begun to show concern regarding the high and constantly increasing percentage of our newsprint requirements that is being drawn from foreign sources and have become interested in the possibility of holding this condition in check by developing the Alaska paper-making field. The Forest Service long ago foresaw that with our growing dependence on foreign paper Alaska could and should be called on to play this part. A course of action was therefore started that would place the Territory in the picture in the proper way and at the proper time.

In the short space of twenty years the United States has passed from the self-supporting stage in newsprint needs to a position where two-thirds of our requirements are now supplied from foreign countries and the percentage imported increases with each succeeding year. So far as the writer knows, there has been but one newsprint mill established in the United States, East or West, in the last ten years, while our newsprint consumption has almost doubled in the same period. Our requirements have now reached 4 million tons yearly and the imports are 2.6 million tons. The deficiency is largely supplied from Canada, with Newfoundland and the Scandinavian countries sending small quantities. As it is estimated that the National Forests of Alaska can produce one million tons of newsprint yearly in perpetuity, the Territory can become a very material factor in recapturing a large portion of this paper industry for the United States and in holding down any possible exorbitant demands by foreign manufacturers.

In 1926, and after ten years of study of the paper-making industry and of the local timber, water powers and other resources, the Service started on a definite campaign to interest paper manufacturers in making a start in Alaska. In 1927 it awarded to two successful bidders two tracts of pulptimber, each containing 5 billion board feet, an amount sufficient in each case to supply a 500-ton daily capacity paper mill for a period of 50 years. At the same time the Federal Power Commission granted each awardee a preliminary water-power permit covering between 50,000 and 60,000 horsepower to be used in operating the mills. Since the date of these awards and grants the interested concerns have been making the necessary engineering investigations and surveys of the power sites, cruising the extensive timbered areas that will comprise the sales, and otherwise planning for the development of their enterprises. The time allowed by the Government for this work was three years and this period expired in June. Just before the expiration date, the paper concerns took the next step provided for in the program and filed their power development plans and applications for final 50-year power licenses. The field examinations for the Power Commission of these plans and applications were completed and the reports submitted about the middle of August. This work was done by J. C. Dort, Regional Engineer of Region 7, who was detailed to Alaska for that purpose this spring.

After many years of investigation of resources and negotiations with interested parties, the point is now reached where the agreements between the Government and the paper makers are up for final consideration and execution by all the parties and Government agencies concerned. It is expected the power licenses will be authorized by the Commission within the next month. The final requirements to consummate the two deals will then be the execution of the power licenses and timber contracts by the paper makers, who will thereby definitely obligate themselves to the projects, and the approval of these agreements by the Power Commission and the Regional Forester, respectively. Practically all controversial points have already been threshed out with the paper concerns and the various interested Government agencies and apparently all of the negotiations can be brought to a close this fall, the way thus being cleared for the start of construction next spring.

It is taking a long time to bring these projects up to the construction stage, but it is necessary to consider in this connection that each of them will involve an investment of $20,000,000, according to recent estimates of the engineers, that they are the initial ventures of their kind in a region still having frontier conditions and in which much primary and fundamental data were lacking and had to be obtained, and that the Forest Service was breaking new ground in setting up the policies and conditions to govern these large sales and in establishing methods to handle the extensive field work that had to be done. Under these conditions all concerned were agreeable to proceeding cautiously.

It is not yet known when actual construction work will be started but it is expected that ground will be broken on at least one of the projects early next spring.

It will be remembered that the project at Ketchikan is held by I. and J. D. Zellerbach of the Crown Zellerbach Paper Corporation of San Francisco, and that the Juneau project is to be installed by two publishers of large newspapers, the San Francisco Chronicle and the Los Angeles Times.

DONE AND TO BE DONE

By Howard Hopkins, Chippewa

The passage and final approval by the President of the Knutson-Vandenberg bill (Public Law No 319) marked probably the greatest step forward in the possible practice of intensive forestry on timber sale areas of the National Forests that has occurred in many years.

In the opinion of many foresters Section 3 of this law, authorizing the use of timber sale receipts for planting or improvement cuttings on timber sale cut-over areas will be in the long run of far greater importance than all the rest of the bill and subsequent planting appropriations actually made under Section 2 of this law.

During the spring and summer of 1929 all members of the Lake States National Forest Region spent considerable time and effort in unifying and correlating the ever increasing public demand for more planting funds with special reference to the vital needs of the new units of the Lake States. The result of the public demand for more planting in the Lake States was the introduction into Congress of a bill (H.R.5410) by Representative Knutson of

Minnesota, which combined the authorization for more adequate planting funds with specific authorization for the use of timber sale receipts for planting or improvement of the stand of such cut-over areas. A similar bill was also introduced in the Senate by Senator Vandenberg of Michigan (S3531). The House bill was amended by the Agricultural Committee before being passed by the House but the Senate bill was passed in its original form. After a conference, a compromise was agreed upon and the bill was then passed by both houses and was signed by the President on June 9, 1930.

The people of the Lake States undoubtedly created the immediate demand for this bill. A Congressman from Minnesota and a Senator from Michigan introduced it. The entire Forest Service backed it up and secured unified approval by the public, with the result that almost immediate passage of this bill was secured. The passage of this law is clear-cut proof of the value of taking sufficient time and trouble to educate the public as to the actual needs, then unifying the individual desires of the various agencies interested and presenting a concrete program to be followed in securing the support of the public which will result in the desired legislation.

It is obvious that action is still necessary to secure the actual planting appropriations authorized by the new law but, besides this, one job which appears in need of immediate concerted action and legislation, the results from which will be of tremendous benefit to the progress of forestry in this country, is as follows.

A national or at least regional land economic survey should be made covering the broad regions of marginal and sub-marginal farm lands. Much has already been done along this line by individual States but so much remains to be done that national aid should be given. Congress should authorize funds to handle this job on a comprehensive scale taking one region at a time. The work would naturally be handled by the U. S. Department of Agriculture with soil, farming, and forestry experts cooperating. The survey would logically follow the taxation studies recently carried on by the Forest Service and could correlate with the present national timber survey. The field work could be done in cooperation with the various State or local agencies and could furnish such agencies data of vital and immediate benefit in solving problems on the best utilization of land, as well as possible adjustment in taxes needed. Definite plans would of course be made to compile and release the information on each unit as soon as it is available. Enthusiastic support of such work would be secured from each State affected, as well as from the general public. The purpose and results secured would correlate excellently with the suggestions of the Federal Farm Board as to the basic work necessary to best attack the sub-marginal farm problem and would also supply data which would greatly help in solving both the general agricultural and forestry problems in this country. A survey of this kind would yield data for immediate use and would form the basis for future increased forestry development by National, State, and private agencies.

Can we visualize the problem, foresee the solution, and then present a definite plan for the public approval? With proper education of the public and leadership in correlating the action of all interested agencies, foresters could lead in securing the necessary action on legislation; the results of which will be of great importance to the cause of the best agricultural development in this country, as well as of utmost benefit to the progress of forestry in the entire nation.

THE WRONG HAT

Santa Fe Magazine: A near-sighted man lost his hat in a strong wind. He gave chase. A woman screamed from a near-by farmhouse:

"What are you doing there?"

"Getting my hat," he replied.

"Your hat," exclaimed the woman. "That's our little black hen you're chasing." — Clipped from D. 9 Bulletin

MORE ON REGULATIONS S-21 SALES

By E. E. Carter, Washington

Mr. Cleator's discovery of the 20 or 25 year old Regulation S-21, as reported in the Bulletin for August 18, is a reminder of the broadness of Forest Service activities, and of the odd sales hidden in the footnote to the table in the Forester's Annual Report, "In addition, minor products, not convertible into board feet, were cut, value $23,503." Christmas trees, shrubs of various kinds, ferns, boughs, bark, pack rat nests, pine needles, cones, leaves, and logs and timbers from abandoned cabins have been sold under Regulation S-21. A Ranger once sold the fence posts and barbed wire from an abandoned homestead under it. There are also the sales of "Naval Stores" handled under Regulation S-19. The Six Section Act of March 3, 1925, gave a clear statutory foundation for these Regulations in the form of the deliberately inserted phrase "and other forest products."

But where does Cleator get the picture of the wideawake Ranger sitting (would he pack a camp stool?) at the Forest boundary and checking the material as it emerges? Can anyone imagine a more boresome job? How could a man keep wide-awake on it? And just think of the painful pause when this item of time is reached in reviewing a Ranger district plan of work and the way Loveridge's underlip would shoot out, before both lips (and his blue pencil) went into action. Shades of "sitting tight"! No timber beast, even when handling sales of soft and fragrant ferns, can merely sit and wait for his job to come to him. If he is wide-awake, he is out after the job. If he isn't, he changes his vocation.

WHEN FISH EATS FISH

By S. B. Locke, R. 4

The late Dr. Jan Metzelaar of the Conservation Department of Michigan in a paper delivered to the American Fisheries Society presented some interesting information on the food habits of trout. In this study 1500 jars containing preservative were distributed among fishermen in Michigan for the submission of the stomachs of trout taken by them, these to be examined in a study of fish foods. In all 649 trout stomachs were examined and considerable interesting information obtained regarding the eastern brook, brown, and rainbow trout food habits.

As all of them increased in size there was a decrease in insects in the diet and a corresponding increase in the crustaceans and fish eaten, more pronounced with the rainbow and brown trout as they grew larger than with the eastern brook. The rainbow only showed a tendency to eat vegetable matter and had an average of more than 15 per cent of this food. Medium sized rainbows following the larger spawners were found to eat some trout eggs while eastern brook and rainbows did not, but probably this situation would change if fish were taken following the spawning season of the brooks and browns. The brook start out largely as insect feeders from 7 - 9 inches long, changing to about equal amounts of insect and fish at 9 - 11 inches but from 13-17 inches long show over 60 per cent crustacean diet with less fish later than at the smaller sizes. To catch big eastern brook, then, one would seem to need crustacean bait such as shrimps or crawfish. Brown trout change from a diet largely of insects to one, when 17-22 inches long, made up over 50 per cent of fish and 70 per cent in the larger sizes. Rainbows change similarly from an insect diet in the smaller sizes to one of over 50 per cent crustacean at the 22-30 inch size with about 24 per cent fish.

As eaters of fish the brook average 20.5 per cent for all sizes, the browns 18.8 per cent and the rainbow 10.1 per cent. In brooks the highest fish food is in the 9-11 inch sizes which take 31.8 per cent. In the larger sizes the browns 17-22 inches, take 53.7 per cent, the rainbow, 22-30 inches, 24.0 per cent, and the brooks 13-17 inches, 11.4 per cent. In this connection should be considered the kind of fish eaten. Eastern brook showed no trout eaten and their fish food was about two-thirds muddlers (Cottus) or known in the Rocky Mountains as bullheads, with between 1/4 and 1/5 of minnows such as shiners, etc. Rainbows showed 6.3 per cent trout eaters, over 50 per cent muddlers or bullheads and the rest rather evenly divided. The arch villian in this case is the brown trout (and with which could be placed the loch leven) which shows 44.4 per cent of the fish eaten to be trout. Although the application of this information to conditions radically different from that under which the study was made might be questioned, this gives some interesting comparisons of the food habits of the three kinds of trout under similar conditions.

CAMERA POINTS AGAIN

By F. H. Eyre, Washington

The camera point project which has now gotten underway in active fashion in R-2, provides a simple but adequate method for measuring the effect of changes occurring in the Forest. Memory can not be trusted to picture the past and figures are sometimes nearly as inaccurate. By means of the camera, however, the essential facts can be readily collected and later presented in usable graphic form.

In the R-2 study, old photographs, dug out of the archives, were referred to the National Forests in order that the points from which they were taken might be definitely located on the ground. First hand information from the forest was also obtained at that time as to whether the subject was of sufficient local importance to make it worth while following up with repeat photographs. All reports were then considered by a special committee in the Regional office. As a result 42 Regional camera points were selected for which old pictures were available and which were of subjects suitable for long time records. Detailed instructions have now been issued. These indicate that it is the purpose "to record graphically and accurately changes in forest conditions covering long periods of time, and to bring out their relation to causes such as fire, forestation, natural reproduction, and grazing." The instructions also indicate the procedure to be followed for locating the camera point permanently and outline the ground to be covered in the collection of pertinent historical facts.

Only camera points illustrating influences of major importance are considered as a part of the regional project, but others of local importance are to be carried by the Forests. Plans contemplate extending the project to include for each Forest at least one camera point for each major influence within a forest type. A project of this kind should be helpful in other regions.

DETERIORATION OF WIND-THROWN TIMBER

Measurements were made in 1926 of the extent of deterioration in timber windthrown on the Olympic Peninsula, Washington, in the blowdown of January 29, 1921. It was found in 1926 that decay subsequent to the blowdown had rendered western hemlock, silver fir, and the smaller trees of spruce completely unmerchantable. The larger spruces still contained a considerable amount of salvageable material, and only the sapwood was decayed in Douglas fir and western red cedar. Similar measurements for the larger sized classes of spruce and for Douglas fir and western red cedar in 1929 showed spruce to be completely unmerchantable except for some of the largest logs which alone would not justify salvage and that the heartwood of Douglas fir and cedar was still almost entirely sound. - From a Digest of R. 6 Investigative Report.

YE EDITOR DISCOVERS

Agricultural editors from thirty-two States met with the editorial and informational workers of the Department of Agriculture in Washington August 26-29 for the eighteenth annual convention of the American Association of Agricultural College Editors. The Department's informational workers, as hosts to the Association, provided a full program of entertainment and contributed materially to the discussion of agricultural editors' problems. Among matters discussed were the coordination of the work of scientific investigators and subject-matter specialists with that of the editors, the improvement of Government and State bulletins and circulars, the professional improvement of editorial workers, and the development of better cooperation between the United States Department of Agriculture and the State Agricultural Colleges in informational work. Following the agricultural editors meeting a land grant college radio conference was held at which the problems of State college and farm and home broadcasting were discussed.

E. R. Price of Virginia was elected President of the Association for the ensuing year. The group voted to hold its next annual meeting at the Oregon State Agricultural College at Corvallis, Oregon.

Several members of the Washington office of the Forest Service attended the meetings and the Forest Service had on hand an exhibit depicting forest fire damage and demonstrating the use of the Laboratory's new "blinker" moisture content testing apparatus.

- - - - - - -

The Supervising Architect of the Treasury Department has issued a call for allocation of space in new Federal buildings throughout the country. To judge from the long list of places where the proposed new Federal buildings are to be located, many a city is to boast of an up-to-date post office. The Forest Service as a field organization with many offices scattered throughout the United States is applying wherever possible for space in these new buildings. This will not only provide the Supervisors, and occasionally a Ranger or an Experiment Station, with commodious quarters, but will mean a very considerable saving to the Government in rentals.

- - - - - - -

Hearings of the Forest Service before the Director of the Budget are scheduled for the mornings of September 17 and 18. The Forester and a number of Branch Chiefs are planning to be in Washington at that time in order to be able to present the financial needs of the Forest Service.

- - - - - - -

Just at the time that the women's clubs of Washington were taking up the question of how to water the shade trees in the down-town section a violent thunderstorm broke upon the city. This storm was different from the usual type of thunderstorms in Washington in that it began before 4:30 so that Government employees could reach shelter before the next shower. The storm, which totaled .4 of an inch of rain, will greatly benefit the shade trees around the city. These trees already are turning color and the leaves are drying and dropping weeks in advance of the regular time. A considerable number of the trees planted by the city during the late spring have succumbed to the extended drought.

- - - - - - -

Francis X. Schumacher of the University of California has accepted a position with the Forest Service as Chief of the Section of Forest Measurements. Schumacher, whose specialty at the University was forest mensur umber of publications on growth and yield.

After Professor Schumacher has become acquainted with the work of his new position, Mr. V. A. Clements who has been acting in the capacity of Chief of the Section will take up new duties at the California Experiment Station.

IMPORTANCE OF MOTION PICTURES IN EDUCATIONAL WORK

That motion pictures have definite and positive teaching value, that they are especially helpful in intensive campaigns for better and more profitable agriculture, that they not only instruct and entertain but promote international understanding and good will, has been the practical experience of the Office of Motion Pictures of the Department of Agriculture, since it first began making and distributing the Department's motion pictures back in 1913.

Five million people in the United States received visual messages during the past year according to estimates based on Department records. The messages related not to one but to 250 subjects, and the 3,000,000 feet of film in the Department's circulating film library were used to make known the results of scientific investigations and to spread the knowledge of improved methods in agriculture, forestry, road building, engineering, and kindred pursuits.

The number of new pictures that the motion picture office is able to produce annually with its limited force of about 20 people, including directors, scenario writers, film editors, cinematographers, laboratory workers, distribution manager and shipping clerks, averages 12 to 30 depending upon their nature and length. The majority are one and two reel pictures, but a few run three or even four reels.

The plan of operations is as follows: The several bureaus submit a proposal for a motion picture on some phase of their work, scenari are then prepared which, when duly approved, edited, revised and again approved, form the basis for the production by the Office of Motion Pictures. A part of the cost, such as traveling expenses and copies of prints, are borne by the originating bureau.

During the fiscal year ending June 30, 1929, there were purchased and put into circulation by approved agencies 280 copies, totaling 389 reels, foreign governments purchasing 87 copies and educational institutions 109. A total of about 2,500 copies have been purchased during the past 10 years.

Preliminary experiments in the operation of sound pictures were conducted the past year. At the present time the cost of sound projection apparatus places it without the reach of most users of Department films. When experiments or commercial developments have made it possible to place sound projection apparatus on the market at a price within the reach of its users, the Motion Picture Office will be prepared to furnish "talking" pictures. - From an article by C. W. Warburton in the U. S. Daily.

PORTO RICO ALSO HAS DROUGHT

"The prolonged drought which has stricken so many of the States for such a prolonged time did not confine itself strictly to the States alone. We have had exceptionally dry weather here for many weeks and of course our tree planting campaign has been given quite a setback.

"The only research work to be undertaken this year will concern itself with growth studies of Insular Forest plantations and of the larger plantations on private holdings. This can be accomplished in connection with many of the field trips and it is really vitally necessary that definite information be given to the farmers about what they may expect to realize from various types of farm woodlands.

"I might mention that our little local drought was broken the day before yesterday, and yesterday requests for more than 50,000 trees were taken care of." - From a letter by Extension Forester Charles Z. Bates, Rio Piedras.

LEAD PENCILS AND LITERACY

By R. V. Reynolds, Washington

The use of lead pencils has doubled in less than two decades. According to the Bureau of the Census, the number of wooden lead pencils produced in the United States in 1929 was 843,000,000, valued at nearly $16,000,000, and required the use of nearly 40 million board feet of cedar. In 1912 the estimated production was 315,000,000 pencils.

Making due allowances for exports, imports, and population, these figures show that in 1912 Americans used three lead pencils apiece yearly, whereas we now use six. In former years the principal pencil wood was eastern red cedar, which has now become relatively scarce and costly. For that reason nine-tenths of our present pencils are made of western cedars.

Manufacturers have also been able to use the wood more economically. It appears that in 1912 about 15 pencils were made from a board foot of material consumed, but now they get 21 pencils from a board foot, due perhaps to the smaller number of knots in the western wood.

The doubled consumption of lead pencils goes hand in hand with the more general use of the typewriter, the fountain pen, and the metal pencil, as well as the greatly increased use of paper. It dovetails with the crowded condition of our schools and colleges, the increased complexity of business records, and the ever growing flood of printed information. Some of the printed matter is useless, or even vicious, but at least it reflects the existence of far more people able to compose it - a more generally educated nation. Without the lowly lead pencil the increase of general intelligence would certainly be hindered - without paper it would be practically impossible. For these two powerful aids in national progress we may thank the forests.

RETIREMENT OF PHOTOGRAPHER JONES

On August 31 Mr. Charles C. Jones, senior photographer in the Photographic Section of the Washington office, was retired from active duty with the Forest Service. Mr. Jones was appointed to the Forest Service September 12, 1906. He had earlier served for some twenty-six years in the Smithsonian Institute and the Geological Survey.

Separation of Mr. Jones from our ranks means a distinct loss to the Forest Service. He is one of the most skillful and experienced wet plate photographers in Washington, having received his training in the earlier days of this class of work when photographers necessarily made their own solutions and mixed their own chemicals. Prepared materials could not then be purchased. Few photographers of the present time know the "tricks of the trade" as Mr. Jones knows them.

He was faithful, conscientious, efficient and skillful. At all times his loyalty to the Service was demonstrated. Even after retirement, knowing the difficulties under which the Section would be operating, and realizing the tremendous amount of work on hand, he reported for duty exactly as if retirement had not taken place.

Mr. Jones leaves with our best wishes; our thanks for loyal and efficient service to the Government, and with hopes for prosperity and good health. - T. W. N.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

VOL. XIV NO. 37 WASHINGTON, D. C. SEPTEMBER 15, 1930

PROGRESS OF CONSOLIDATION SLOW BUT SURE

By L. F. Kneipp, Washington

Some of these days when Harry Kylie has exhausted all other scenarial possibilities he may find it practicable to develop a slow motion picture showing the changes which have occurred in National Forest boundaries and net National Forest areas since February 1, 1905. It will be an interesting display of advances and recessions, of expansions and contractions, which will typify or illustrate, perhaps more strikingly than any other way, the response of the National Forest system to the actions and reactions of public interest throughout that formative quarter century in which most of the National Forest policy has taken shape.

The area records as of June 30, 1930, will contribute their part to this movement. They were noteworthy in that while they showed a decrease of 589,023 acres in gross areas they also showed an increase of 340,297 acres in net areas. For the first time in many years private and State holdings dropped below the 24 million acre mark. In consequence the proportionate part of the National Forests definitely under Federal control is substantially greater than before.

One of the few remaining military reservation National Forest areas, the Ft. Huachuca, with its 32,635 acres, was handed back to the War Department. From the Stanislaus 7,726 acres were transferred to the Yosemite National Park and from the Tusayan 115,500 acres were transferred to the Navajo Indian Reservation. Through exchanges the State of Washington took 47,711 acres from the Olympic and Snoqualmie Forests and the State of Oregon took 43,388 acres from the Siuslaw Forest. Large areas of nonpurchasable land were eliminated from the Pisgah and White Mountain National Forests.

However, Congress enlarged the area of the Fremont Forest by 193,199 acres and the Helena Forest by 800 acres. The President by proclamation added 13,785 acres to the Ashley Forest, 1,280 to the Black Hills, 1,066 to the Custer, 1,347 to the Harney, and 122,966 to the Nantahala; while by executive order he increased the Fishlake by 13,578 acres.

The effect of the several amendments of the general exchange law which permit exchanges within certain fixed distances from National Forest boundaries manifested itself to the extent of 43,446 acres, while within the National Forest boundaries the net gain through exchange amounted to 147,130 acres. Thanks to the Weeks Law as amended by the Clarke-McNary

Law the National Forest net area was further enlarged through the acquisition by purchase of 417,064 acres.

Thus the process of expansion and consolidation moves steadily along. Gradually the acreage of timber productive land under Federal control grows from year to year. Slowly the conflicts of management in timber sale working circles and range administrative units are being eliminated through the extinguishment by exchange or purchase of adverse private ownership. Right-of-way problems, extreme fire risks, and other conditions inimical to effective administration progressively disappear from the picture. While the boundary, exchange, and acquisition work lacks the spectacular, its cumulative effect is each year more apparent.

This, of course, relates to the situation "as is." Within the next thirty days the Forest Service is to submit to the Commission on the Conservation and Administration of the Public Domain a program of additional forest, watershed, and grazing areas in the Western States believed by the Forest Service to be suitable for administration as National Forest areas. Thus far nothing has come to the Washington office out of the West which gives even a remote idea of how extensive this program will be, and there is, of course, no indication either from the Public Domain Commission or from Congress as to the extent to which that program will be approved and made effective. But inevitably it will result in considerable additions to the National Forests, each of which will entail a new problem of acquisition or consolidation through exchange or purchase. The boundaries scenario has not yet reached its climax.

BIG BUSINESS

The fiscal year 1930 gave the Forest Service the largest timber sale business on record. The cut under sales and exchanges exceeded 1,600,000 M feet. Timber sale receipts gained $287,000 to a total of $4,337,000, with all Regions except R-6 contributing to the increase. Especially noteworthy was the R-7 increase of $239,000.

The depression in the lumber industry was reflected in the receipts for the quarter ending June 30, however. Compared with the corresponding quarter of the previous year, Regions 1, 2, 3, 5 and 6 all showed decreased timber sale receipts, and only small gains were registered by Regions 4, 7 and 8. For the whole Service, the decrease for the quarter was $117,000, or about 12 per cent. The surprising thing is that it was not worse, in view of the distressed conditions in the lumber industry.

For the year, timber cut under exchanges amounted to 167,000 M, worth $454,000, with Regions 3 and 5 each cutting over 50,000 M.

Forests with timber sale receipts in excess of $50,000 were: In R-1, Coeur d'Alene, $244,000, and Kaniksu $110,000, with the Kootenai showing a value of timber cut of $53,000 but receipts under the $50,000 mark. In R-2 Harney, $110,000, Medicine Bow, $73,000, and Washakie, $57,000 (the Washakie is new to this honor roll). In R-3, Sitgreaves, $111,000 and Coconino, $87,000. In R-5, Stanislaus, $282,000, Sierra, $276,000, Lassen $246,000, Plumas $192,000, Modoc (new) $81,000, and Shasta (new) $54,000. In R-6, Snoqualmie $288,000 (the largest amount from any Forest in the country), Olympic $162,000, Deschutes $120,000, Cascade $92,000, Crater $81,000, Malheur (new) $76,000, Fremont (new) $61,000, Mt. Hood (new) $54,000, with the Whitman having a cut worth $52,000 but not quite reaching the $50,000 mark in receipts. In R-7, Ouachita $198,000 and White Mt. $106,000. In R-8, Tongass $82,000. The leading Forests in the other Regions were: In R-4, Targhee $48,000 and Payette $27,000. In R-9, Chippewa $27,000, (but watch for the Superior next year.) These Forests accounted for 79 per cent of the total timber receipts.

Total timber sale receipts by Regions were: R-5, $1,187,000; R-6, $1,114,000; R-7,

$506,000; R-1, $485,000; R-2, $466,000; R-3, $278,000; R-4, $155,000; R-8, $93,000; R-9, $52,000. The lead was rewon by R-5 with its pines, after a couple of years of dominance by R-6 with its fir; R-1 managed to keep ahead of R-2, thanks to the splitting off of R-9; and R-7 showed what could be done with a net area of less than 5,000,000 acres by passing both R-1 and R-2 to grab third place, at least temporarily. Meanwhile R-2 smilingly thinks of its pulpwood sales developments, and, like the town whose team will not win the pennant, talks about next year. - E.E.C.

OUR PR POLICY

By Howard Hopkins, Chippewa

The Forest Service for many years has rightfully prided itself on its complete independance from political activity. It is a vital satisfaction to each man in the Service to know that neither political friends nor enemiies have the power of barring or speeding the progress in advancement in rank or salary of anyone in the Forest Service organization.

When I first started in the Service this important independence of politics and politicians was so deeply impressed on my mind that I felt any Forest officer might be subject to criticism if he as much as mentioned his Forest to a U. S. Senator or Representative. I sat at the same table for some weeks with a Representative from Colorado but if the conversation veered around to the Forest I felt duty bound to hastily change the topic in order that the possible stigma of lobbying for the Forest Service might not be directed at any Forest officer. Doubtless many others have had somewhat similar experiences, though probably with not quite so vivid an anti-political attitude.

There is, however, another side to this problem. Forest officers are employed by the people of the United States. Congress is the actual representative of the people of the United States. Congress acts in somewhat the same manner as the board of directors act in handling the affairs of a private company. Supposedly, Congress or the board of directors knows the broader problems and main work being done by the Forest Service or company employees. Still would it not be distinctly important, whenever opportunity offers, for any employee of the company, particularly the local branch heads (Supervisors), to get in touch with local or travelling members of the board of directors (Congress), and show them what the company is doing and what it needs in order to accomplish the work more efficiently for the company or country?

The Forest Service spends thousands of dollars each year in time and money in educating the general public. How much time could we give and call it well spent to educate a man who officially represents from 50,000 to 1,000,000 people of voting age, as a Senator or representative of Congress may do?

The Forest Service has been too timid and retiring and has ignored a duty for fear of being considered politically inclined. Our duty is to see that each elected representative of the people who serves on our "Board of Directors" is fully informaed as to the work done and to be done on the National Forests of the community he represents, both locally and nationally. This can be done without affecting our internal independence of politics which naturally at all costs must be maintained. In our anxiety to keep our hands free from any or all political activity we have ignored those elected as Representatives of the people and then we gnash our teeth with surprise when the "Board of Directors" composed of these same Representatives fails to pass a needed measure or does not recognize a problem so clear to the men on the ground. Is not the fault mainly our own? Let us acknowledge the error and take a new path, keeping strictly clear of any political activity as such, but making every effort as part of our recognized job to see that members of Congress be recognized as the representatives of our employer and as the voice of some thousands of people, and that henceforth each be fully informed and educated as to the work and needs of this organization.

HAVE WE ANY?

The profession of forestry has become increasingly important in the United States during the last thirty-five years, and large numbers of young men are attracted to it for various reasons.

The yields of forestry are derived through forms certain of plant life. The forester must possess a knowledge of botany. He also must be versed in bacteriology and plant pathology. Zoology, particularly entomology, is also essential. General geology and soil science contribute necessary data. Meteorology is very important. However, as a prerequisite to progress in the foregoing the student in forestry must be familiar with general physics and chemistry including the organic compounds.

Since the forester deals with profitable timber production on large and irregular areas, he must be a surveyor, which requires him to know something of astronomy. The computation of yields, present and prospective, and the multitude of facts that must be ascertained and problems determined require a knowledge of mathematics through the calculus and also a facility in the use of statistical methods. For research work it is desirable that the forester extend his knowledge of mathematics to include differential equasions and vector analysis. Since forestral practice is directed toward the supplying of material needs, a knowledge of economics is indispensable.

The foregoing indicate only fundamental requirements. In addition to these the professional branches of silviculture, protection, extraction, utilization, and management must be mastered. These and the fundamental subjects may be most readily pursued at a regular college of forestry granting degrees in forestry after a four or five year course. It is true that the various branches may be mastered in other ways, but the forestral aspirant in such cases must count on spending a great deal more time than if he pursued his studies in college.

Many practical arts must be mastered in addition to the basic academic subjects. At any time in his work the forester may be required to engage in microscopy, photography, cartography, drafting and typing. Necessarily he is an expert in woodcraft. He must be qualified to undertake human, animal, stream, motor, water, and air transport, and he is frequently called upon to turn out good jobs of mechanical, electrical and civil engineering. News Release of a State Forestry Commission.

Paper Industry Center

"Four misconceptions have misled public opinion regarding the South as a possible center for the future paper industry of the United States.

"First, paper manufacturers have thought of forests of Southern pine in terms of the original forests which once covered the South Atlantic and Gulf States, consisting chiefly of the old trees, practically all heartwood, which once gave to Southern yellow pine its reputation for structural purposes. Such pine is rich in resin and capable of manufacture only into kraft paper. Saw mills have removed the great bulk of these original forests. It is the second-growth forests, the trees in which heartwood does not form until they are about twenty-five years of age, which are the actual material to be dealt with in the present and future.

"Second, because the slash and longleaf pines produce abundant supplies of spirits of turpentine and rosin it has been assumed that these pines are too rich in resin for consideration other than for kraft paper. Experiments have demonstrated, however, that these all-sapwood pines, prior to scarification for oleoresin production contains but little physiological resin. The actual crop of oleoresin is a pathological product. The question of resin removal therefore no longer exists, and the fields is open for manufacture of all grades of paper by any process.

"Third, cattle owners and turpentine operators have annually burned the carpet of wire grass, the former through the misconception that cattle were thereby given better grazing, and the latter through the assumption that burning the woods was the necessary protection for a crop of naval stores. It has now been demonstrated that better grazing is found on unburned land, and the official records of State forestry departments show that through timber protective associations, with resultant intensive fire-control, ample protection against fire can be secured at the low cost of 3½ cents an acre.

"Fourth, the States have failed to provide just measures of taxation of cut-over lands where reforestation is being attempted. A healthy sentiment is now rapidly developing for laws which will establish a minimum taxation during the period of early growth of new forests, and until they become revenue producers.

"The rapid growth of these pines, especially the slash pine - about two cords per acre per year, - is in startling contrast with the slower growth of northern woods, though from a chemical point of view it is perfectly reasonable and to be expected.

"These pines can be termed 'triple purpose' trees, namely, utilization of the thinning from natural reforestation for pulp wood, then production of naval stores, and finally utilization of the mature trees for lumber. More than 100,000,000 acres of cutover lands in the South are available for such development, while further millions of abandoned farm nds can be readily converted into revenue producing areas through pine tree growth. Such abundant and rapid growth assures a permanent supply of raw material for a paper mill, and therefore justifies the conviction that gradually the South will become the natural home of the paper industry. - A Statement by Dr. Charles H. Herty, clipped from American Tree Association's "Forestry News Digest" for July 1930.

AVERAGE YEAR FORAGE

The results from the carrying capacity project on the Santa Rita Range Reserve while not as definite as desirable are of material importance and give an insight into some phases of range carrying capacity that we did not have before, besides indicating a more definite line of study of certain phases for the future. The main conclusions are as follows:

1. That although most of the average years supply of forage is produced during the summer growing period there is a potential supply produced at other seasons that assumes real importance in periods following drouth summers.

2. That the investigations will have to be continuous throughout the year in order to determine definitely what goes to make up the years forage supply, as well as the relative amount of it that is produced at different seasons.

3. That in a region of such variable climatic conditions, as the Southwest, a conservative rate of stocking is absolutely essential, a conservative rate of stocking being fifteen per cent below what the range will carry in an average year, and never in excess of this number.

4. That as an additional precaution against extreme drouth years it is best to carry approximately fifteen per cent of the conservative number in young stock that can be disposed of readily.

5. That a conservative rate of stocking on well stocked ranges similar to the Reserve means an allowance of approximately 22.8 acres yearlong in the foothills type; 27 acres in the mesa type and between 50 and 60 acres in the semi-desert or browse type of range.

6. That the year's supply of forage, while largely produced in response to summer rains, is very noticeably affected by rainfall at other seasons, as well as by the amount, character and distribution of rainfall throughout the year.

7. That both degree and frequency of clipping (simulating grazing) during the summer have a very marked influence on volume production of forage. A close degree of use may cut the production as much as thirty or forty per cent and frequent use may decrease it by as much as fifty or sixty per cent.

8. That degree of use appears most important in that it seems to affect all species studied while frequency of use appeared to affect only certain species. From R-3 Annual Investigative Report.

YE EDITOR DISCOVERS

Those who have been unfortunate enough to visit Washington in the last few weeks have witnessed the very great changes that are now going on in the building program. At the present time the old administration building which has housed the Commissioners and Secretaries of Agriculture for 62 years is being demolished. The site for the proposed new building of the Department in which according to plans the Forest Service will within the next year or year and a half find itself is being rapidly cleared of the old buildings. Most of the structures are brick houses of the two-story variety, although there are a few larger ones which have been occupied by various units of the Department. As some of these are in use their demolition has been postponed until the rest of the site has been practically cleared. It is very difficult for even those who are familiar with the city now to find various offices which were formerly housed in some of the temporary structures or rented buildings. Thus, Forest Entomology has been relegated to one of the old temporary wooden affairs, the Office of Publications is in the new unit of the major departmental buildings, and several units of the Biological Survey have been moved from their customary surroundings. The Office of Pathology has been fortunate so far, as the building they are in is across the street from the site of the New Department building and will not be moved until this is completed. Many of the Government Hotels around the plaza have been demolished and landscaping features necessary to make a big plaza from the Station to the Capitol have already been begun.

- - - - - - - - -

Hercules's bow already strung has been left with the Forest Service. Recently a caller at the office left in our possession a piece of birch about 5 feet long and 6 inches in diameter, from which a branch has grown and then passing back through a fork in the tree has become thoroughly grafted into place. As far as is known this is the first instance on record where a branch growing out from a tree grew back into the tree itself. The branch which forms the string of the bow is about 1½ " in diameter. This section of wood was found not far from President Hoover's Rapidan Camp in Virginia.

- - - - - - - - -

The famous houn' dawgs seem to have gotten into the smudge. Missouri game wardens complain that hounds and forest fires are destroying the wild game in the Ozark Mountains. It is alleged that the hounds run the deer into the cool creeks, causing them to contract pneumonia and die, and that the forest fires which dry up the streams destroy the nests and hiding places of the wild turkeys, making the country desolate indeed!

SELLING FORESTRY TO THE PUBLIC

In times past, many National Forests have told of the visitors to interesting places on or near them, and have pointed with more or less pride at the large numbers involved. It is therefore with some hesitation that the Rocky Mountain Forest Experiment Station staff, a staff of but one man by the way, brings out what he is doing in selling forestry to the public.

In 1929, some 1,434 visitors, lay and professional, visited the Fremont Branch Station near Colorado Springs. During August of last year, 499 people made the mile-trip from the head of the Mt. Manitou Incline Cable railway over the trail to the Station, an average of more than 16 a day. To meet the situation Roeser has put into effect the following scheme:

1. A brief talk describing the work of the Rocky Mountain Station by the Incline conductors on each trip up.

2. Tree signs of attractive design on typical specimens of all the important species between the top of the Incline and the Station, but mostly within the Station grounds.

3. Distribution from the office of a descriptive pamphlet outlining the work of the Station and of such other literature in which the public may be interested.

4. Office display of exhibits containing stem cross-sections, herbarium specimens of interesting plants. etc.

5. Reservation of the enclosed 160-acre administrative site (unofficially) as a Wild Flower Sanctuary. This has been widely advertised locally and brings many nature students to the Station. - E.N.M.

GOING! GOING! GONE!!

A small but sinster red flag placed at the portal of the old Atlantic Building gave rise on the morning of September 4 to the advancement of many theories among the cell mates as to its presence. Your inquiring reporter was led by some toward the belief that the Forest Service had gone Soviet. Others maintained that certain venturesome spirits had sallied forth into the wildwood over the holiday returning with healthy crops of "chigger" bites which, having been mistaken for something else had brought about a quarantine. Still others held fast to the tenet that it was merely a measure of precaution to keep the bull outside. They were all wrong. At 3.00 p.m. our slumbers were widely terminated by the ringing of an over-sized dinner bell, and the Service meeting then in progress was almost disrupted by a raucous voice rising from the depths of the ground floor announcing that our venerable domicile was for sale and how much did he hear offered. Evidently the love of the old place is not measured by dollars and cents among the personnel within its walls for although several employees were noted among the audience they succeeded admirably in maintaining a discreet silence. It was all over in a few minutes, a local storage company having displayed the most optimism as to our value. After the heated season we have just passed through we sincerely trust it is a cold storage company and that no time will be lost in the installation of the necessary equipment. In other words, the Atlantic Building has been sold at auction.

Editor of the Bulletin:

Having had some experience, in these columns, with the danger of criticising the reliability of ancient records, the writer cannot refrain from rushing to the rescure of Munns' explanation of the history of Oregon names from the vicious attacks of iconoclast Guthrie, in your issue of August 11.

The present reflections concern the reference, in the same issue, to the finding by the Danish scientist Nielsen of the early Babylonian picture which, he concludes, proves that it was a pine cone instead of an apple with which mother Eve seduced Adam in the Garden. We commend to Munns, and defy Guthrie to disprove, the important additional conclusion, unaccountably missed by Nielsen, that this explains the origin of the name pine-apple. - C. L. HILL

"THIS TEACHES US A LESSON"

A member of the RO went up the Carson way last week to try a few assorted spinners, flies, worms, and good luck charms on some of those rumored 25 inch trout in the Rio Grande Canyon. At the mouth of the Hondo his car arrived just as a smoke was seen rising from the outfit in a nearby camp, the owners distant somewhere on the fishing job. The arrival was just in time to put out a blazing bed set by embers from the camp fire, "which they thought was out". Several quilts were ruined but undoubtedly the whole outfit including a big Buick Sedan would have gone up as the bed was partly against and under the car. "Gosh, this is a lesson to us", said the sober-faced owners when they came back later in the day. Since it was miles outside the Forest we had to let it go at that. - E.P.A., R-3.

DOUGLAS FIR SELLING IN NORTHERN IRELAND

According to the trade, Douglas fir is being offered at low prices in Northern Ireland and it is reported that during the month of July, purchases amounted to 500,000 board feet, there being a steady demand for about 200,000 board feet per month, states a report from Franklin B. Atwood, American Vice Council at Belfast to the Lumber Division of the Department of Commerce.

- - - - - - - -

It is estimated that 90 per cent of the 50,000 Christmas trees sold to the Denver trade last season were tagged by the U. S. Forest Service or the State Forester as properly cut from thick stands of young trees needing thinning for better forest growth.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER Theodore Roosevelt

Vol. XIV No. 38 Washington, D. C. September 22, 1930

ATTENTION! RIGHT DRESS!!

Dear Ed:

They hav been a right smart lot of artikels lately about uniforms fer forces' rangers. Now as a general thing, I aint fer takin' my pen in hand, but this here uniform question keeps arisin' an' I caint get shet of it. If you kindly decide to publish this they aint no charge - youre a welcome.

Now, first thing, should we hev a uniform? Yes! Certainly! I agree with the majarity - or vociferus minority, whichever - absolutely, with certain reservations which follows. Seems to me a uniform is O.K. fer them as havent nothin' practical to do--like them PR evangelists - or others when ridin' on trains or settin' in hotel lobbies explainin' the influence of fores' denudation on depleetion of preeciputation an' all.

Next thing--what kind of uniform, if any. Why, I should say something sortie like the one we hev, something servicable leavin' some leeway fer individule choice--say a pair of shoes, pants or britches with pootees, an' a coat. Vest optional fer them with form factors as allows it. Shirt ought to be somethin' comfortable with a tie. Of course everything should be washed an' neetly patched an' the ranger should hev a shave when off duty, if ever.

Now, as fer hats--might as well come right out first thing--I'm dead agin the ol' sombrero. Since we put the ol' cavayos out to stubble we ain't had no more use fer a sombrero than a second lootenant has fer them vestig'l rowel-less spurs they todle along with. Most of us couldn't ride nothin' that don't steer with a wheel, an' that old cowboy cast-off sure blows out of automobiles an' airplanes. Whilst goin' thro the brush the old board is forever gittin' knocked off onto the small of yer back. Hot days it parboils bald heads. Cold weather it cuts down the circulation to the point of anistheesha. Nuther thing--it makes the wife mad by knockin' off her specks and stubbin' the baby's nose when yer kissin' good-bye. Course this here's all hairisay to them romanticistis of the great open spaces as claim the sombrero the olny remaining sure sign of a fores' ranger. Besides a few still use horses in open country an' need 'em. So I'm suggestin' that them as use their brains be allowed to wear somethin' else--most anything'll do that'll keep the old cerebrum in a cool dry place. Yes, by golly, I mean a cap--something betwixt a coon hunter's style an' a Swiss yodeller's with a red feather, without no hardware on it.

Now when it comes to insignia--right there's where the grade set by them that loves soldierin' gets two steep fer me, an' we ort to begin to cut an' cast over. First place this aint no military organization. Course in a soldierin' outfit you got to hev the hardware so's to know when to throw away your cigareet an' saloot. In a small layout like the Fores' Service we all know each other by what they've did. It aint like havin' to size up strangers from what they ware. Then who is it these rank advocates 're trying' to fool? Must be the gen'ral public. Now in my opinion the gen'ral public don't give a dam. To them we'll always be just fores' rangers. Nobody'll ever know what a silverculturist is--not even the P.C.B. Bout as fur as the gen'ral public can go is to tell an officier from a simple soldat--an right there's where the harm comes in.

When you start this rank system you're beginnin' to make castes an' outcasts. 'Twont be long 'fore rangers an' silverculturists 'll hev to keep one pace to the rear an' eat with the help, while supervisors an' foresters 'll have their own private bootleggers an' all. Now the caste an' outcaste system is sure to destroy the best thing the Fores' Service has--the thing no soldierin' outfit or no other concern that I ever see has so much of--an' that is loyalty. Now this loyalty comes from individule respect--individule responsibility. We're a pioneerin' outfit. All hev to think an' act as individules, but we're all headed the same way, an' know it. Ranger an' chief hev humped over the same camp fire smellin' the burnin' bacon an' cryin' over the aromeo of the pine smoke. When workin' a fire the ranger's like as not bossin' a crew that stands higher on the payroll. Fella could talk with Mr. Greeley or Mr. Stuart 'bout whether we should hev state or federal control of fores' devastation an' learn things he don't know nothin' about. Now, if you can elevate the piece through that much range, just feature a buck private arguin' with Gen'ral Pershing whether we should have an' autonomous American army or throw in with the French. Well, I'd hate to see things change so men like Mr. Graves, Mr. Greeley an' Mr. Stuart wouldn't want to be called fores' rangers. I recollect once hearin' a pop squirter in an ice cream joint call a second lootenant "sergeant". The second looey didn't like it hardly at all. That's because sergeants an' lootenants aint been brought up the same, but rangers and foresters hev.

Now sposin' this rank stuff was in effect and Regional Forester Kelley was out goin' over your district plan. Long about quittin' time you miss your tabacker. Would you stomp into the office an' say--"Hey Evan, what in ---- did you do with all my tabacker"? No, you wouldn't do that a way. You wouldn't even go in there yet to notice your tabacker was missin' You wouldn't even a bin there to lose your low grade tabacker. But sposin' you had. Well you would wait till the R.F. was out--then you would sneak in like you had some papers or something, and when the orderly wasn't lookin', you would notice your tabacker was gone, but you wouldn't say nothing. The R.F. would have your tabacker an' you would have a feelin' of dissatisfaction with the Fores' Service. Well, thing I'm drivin' at is--you don't want to throw no grit in the bearin's of a machine that's workin' as smooth as the Fores' Service. When a Service gets ailin' it takes a sight longer fer it to get all better than it does fer an individule to. This rank an service stripe stuff looks mighty indigestible to me. Speakin' of service stripes-- if a fella's been in an outfit like this long enough to want stripes an' aint done nothin' so's we know it, he ort to be ashamed to ware 'em anyhow.

I reckon this sounds like a minority report to some, but I have a lingerin' superstition that there's a lot of gents that's lookin' forward to walkin' in the file closures that disagree with what's been said afore this article. I know Capt. Guthrie will twirl his mustache 'an say aplenty. Some could maybe write as well as me if coaxed - I know Billy Brown could an' I wisht he'd submit an appendage to his last report. Then there's Locoed Silas could say it with song. If he feels like singin' the right strain, I wisht he'd turn his moose loose. I aint foolin', something has got to be done soon--this here Service needs real leaders like us.

Yours truly,
DOUGLAS DENDROCTONES, Silviculturist.

DOUGLAS FIR IN GRAYS HARBOR COUNTY, WASHINGTON

By Henry B. Steer, Washington

The Office of Forest Measurements has just completed the preparation of a volume table for Douglas fir based on the field measurement of 1,936 trees on the Quinault Indian Reservation in Grays Harbor County, Washington. The Quinault Indian Reservation, comprising about 225,000 acres in Grays Harbor and Jefferson Counties, Washington, borders for at least twenty five miles on the Olympic National Forest, and has represented, within its boundaries, every silvicultural condition found on the western slope of the Olympics up to an altitude of two thousand feet. Since Douglas fir, as a commercial species, is not commonly found above this altitude, the conditions on the Quinault Reservation may be taken as generally indicative of those ordinarily found on the western slope of the Olympic Peninsula.

While lots of Douglas fir volume tables have been constructed, distinction is claimed for this table for two reasons. In the first place the field data were gathered by scalers and rangers of the Indian Forest Service employed on the Quinault Indian Reservation in addition to their routine duties and without extra expense to the Government. Incidentally about 2,500 trees each of Sitka spruce, western hemlock, western red cedar, and western white pine were also measured in the same manner by the same men. In the second place the table is unusual in that it has not been extended beyond the limits of the original field data by curves or computations. Briefly developing each of these "distinctions:"

1. About two and one-half years ago a working plan for the volume table study was drawn up, and mimeographed forms for the collection of field data procured. Whenever a "side" was moving; when a break-down occurred; or when for any of numerous reasons logs were not being loaded out for a few hours or days by a "side" thus releasing a scaler, the scaler so released went among the felled timber and took volume table measurements. Similarly whenever a ranger had a little spare time, he also went out and took volume table measurements. I would estimate that fully 80 per cent of the trees were measured during many short periods of not over a half day's duration at any one time -- in other words, by every man on the job putting in a few hour's work whenever he had any spare time, the number of trees measured increased slowly but surely until we felt that we had enough to build volume tables which would accurately reflect Quinault, and general Olympic, conditions.

2. The average person has no real conception of the size to which Grays Harbor Douglas fir commonly grows. By size is not meant particularly diameter, although trees ten to twelve feet through have been noted, but height. Think of a tree only twenty four inches in diameter outside the bark at a point four and one-half feet from the ground with a merchantable used length of one hundred and forty feet to a top diameter of eleven inches inside the bark and with a total height of not less than one hundred and sixty feet. Such trees, which have a taper of less than twelve inches in one hundred and forty feet are not uncommon on Grays Harbor. Similarly trees forty eight inches in diameter breast height not uncommonly have a used merchantable height of two hundred and sixty feet, a total height of at least two hundred and eighty feet, and taper about thirty two inches in two hundred and sixty feet in length Douglas fir trees having a total height of over three hundred feet are not at all unusual. Surely a record of actual measurements of such trees will become increasingly valuable in years to come.

The Douglas fir volume table will be printed on the usual Forest Service forms, and similar tables for Sitka spruce, western hemlock, western red cedar, and western white pine will be completed in the near future by the Office of Forest Measurements.

FLYING FORESTERS?

By Percy A. Thompson, Cascade

Have you ever flown over a National Forest in an airplane? If so you know what a marvelous view can be had of even the ruggedest country and how swiftly one can get from place to place. You were probably on a forest fire reconnaissance and perhaps you were disappointed in the practical results of the trip. Perhaps you agree with the articles "Beating Fire" in the July 1930 Forests and Forest Life which says in part: "Throughout the ten years during which aircraft has been tried out for various purposes on the National Forests this mechanical aid to fire control has been a disappointment to fire executives."

Up to 1917 little if any use was made of the auto or truck in transporting men and materials to fires, for patrolling routes of high risk. Why? There were few roads in forested areas which could be travelled by auto or truck. You and I up to 1915 or 1916 did not and could not afford to own an auto. We had our horses and were pretty well satisfied with them. About 1917 (earlier in some few instances) Forest officers began to buy and use cars. So did every one else. We joined in the popular clamor for more and better roads and old Dobbin was left in the barn lot more and more as time went on.

Since 1917 the mileage of roads has been increased many fold and today we depend upon the auto and truck almost exclusively for transportation over any great distance. The article tells us also that: " - speed in action all the way from the discovery of a fire until the last spark is out lies close to the heart of effective fire control. Speed in travel to fires is largely controlled by the availability of roads and trails." Also - "The importance of an adequate system of roads and trails is illustrated by the fact that in the disastrous season of 1929 no fire escaped in north Idaho and western Montana which occurred within striking distance of a road."

It will be 28 years at our present rate of construction before the road building program in the North Pacific District will be completed. It will be 30 years before we can complete the road building program on this Forest (Cascade-Oregon) which supports a stand of over 23 billion (23,000,000,000) board feet of valuable timber. Can we afford to wait 30 years, or twenty years or even 10 years to give this valuable area the protection it needs?

Landing fields are being constructed this year in parts of Idaho where there are no roads and the cost of building roads is very high. The money we spend for one year for a few miles of road in each Forest would go a long way toward putting a landing field somewhere in the heart of every large interior region in the National Forests.

Long before we finish our road program you and I (or our successors) will be hopping from here to there in a plane and there will then be no lack of support for a program of landing field construction.

We were satisfied to plod over the trails on old Dobbin until we bought our first auto. Right then and there we became dissatisfied with three miles an hour and demanded 15. Today we want from 20 to 40. Have we no vision except where trees are concerned? Erle Kauffman intimates in "Flying Foresters" in April Forests and Forest Life, that we "lean toward the static rather than the dynamic"?

It has been said that our experiences with airplanes as one of the instruments of fire control have been "disappointing"? Probably our experiences with truck and car transportation were disappointing in 1910! Men who brave the dangers of fire and all the elements in the forests must face the fact that, sooner or later, we must become "Flying Foresters" if we want to attain the greatest speed in reaching and suppressing fires.

For years we've prided ourselves on our farsightedness; we've builded with an eye ever to the future. Let's drive this problem out in the open and tackle it with our best brains and resources. I am confident that when we do we will find that the airplane has a greater place in our work than even the most enthusiastic has dreamed.

LABORATORY DISCOVERS HALF-BREED PINE

A half-breed pine is the Laboratory's latest discovery, the putative offspring of a western yellow and a Jeffrey pine. There seems to be no other way to account for the facts in the case.

The parent species are extremely similar, but heretofore there has been a last, unfailing means of telling them apart - the odor of the wood or leaf, which means a difference in the chemical basis of the extractives. The oleoresin or "dip" that exudes from a wound in western yellow pine yields terpenes, in other words common turpentine. That from Jeffrey pine is practically in a class by itself, yielding heptane, an aromatic fluid whose odor suggests lemon extract, and which plays an important part in the preparation of antiknock motor fuel.

Consistently, for these two species, heptane has meant "Jeffrey," terpene has meant "western yellow." What kind of a tree, then, yields both heptane and terpenes? The answer is obvious, and the existence of at least one tree of that kind seems definitely proved by recent tests. A number of samples of Jeffrey and western yellow pine dip were being distilled at the Laboratory for the California Forest Experiment Station. Most of the samples gave off either straight heptane or straight terpenes, in the regular way. But when one particular sample was distilled, first heptane and afterward turpentine dripped from the spout. It was thought that two dips had got mixed, but another sample, collected with special care from the same tree (supposedly a Jeffrey), again produced the two substances in succession as the temperature of the still was raised.

What the forest botanist had suspected was confirmed by the chemist. The tree is a hybrid, a creature of mixed "blood," and as the old saying has it, "blood will tell." - From "The Log of the Lab."

THE U. B. I. C.! - WHAT A MEETING!

By J. O. Stewart, R. 4.

Maybe 10,000 - Maybe 15,000 people! Hot dog stands, soda pop, the 38th U. S. Infantry Band, exhibits, better babies contest, two dancing pavilions, moving pictures, Ute Indians, Whites, high Government officials, including the Secretary of Interior, Dr. Ray Lyman Wilbur - all at Fort Duchesne, the agency for the Uinta-Ouray Indian Reservation. Three days - August 6, 7, and 8.

U. B. I. C. means Uintah Basin Industrial Convention. It is an annual affair. The slogan for this year's meeting was "Better and More Permanent Homes in the Uintah Basin". Dr. Wilbur, Dr. E. G. Peterson' President of the Utah State Agricultural College' Congressman Don B. Colton and many others based their addresses on the slogan.

Members of the faculty of the Agricultural College, Extension Service, State Department of Agriculture, Forest Service, Bureau of Animal Industry, and others conducted classes in various subjects such as stock judging, combating noxious weeds, growing crops, tree planting, diseases of livestock, caring for the range, poisonous plants, improving farm pastures, bees, furnishing the home, etc.

Besides dancing there were base ball games, horse shoe pitching Contests, horse pulling contests, parades participated in by the Indians in all their gay colors.

Old timers at the convention said it was the biggest and best ever held.

The range classes conducted by Messrs. Winkler and Standing were well attended. Many people were observed viewing the Forest Service exhibit, which was designed to sell the need for a lumber refinishing plant in the Basin in order that local timber on the National Forests might be utilized, employment might be given to local people, and thousands of dollars now spent outside the Basin for finished lumber might be kept at home.

The people in attendance were largely from the Uintah Basin counties of Uintah and Duchesne, but there were many from the more distant districts, particularly Wasatch County. One day there were 2,647 automobiles representing 20 different States, and conservative estimates place the attendance at 15,000 people.

It is believed the convention was a great success. It was somewhat like a county fair, farmer's short course, and summer outing all in one.

The extensive lawns, shade trees, electric lights, and old Army barracks of the old Fort provided a splendid setting for the convention.

YE EDITOR DISCOVERS

The American Tobacco Company, on August 2, devoted a portion of its radio hour to warning smokers against carelessness with matches and cigarettes in the woods. The message which went out over a national hookup and which thus reached millions of people throughout the nation was as follows:

"A hike through the woods and the enjoyment of a cigarette - how perfectly they go together. There is too much enjoyment in a cigarette to let it be the cause of danger or destruction. In the interest of our forests and woodlands and in cooperation with State and national authorities, the American Tobacco Company broadcasts these two simple rules for vacation time, or whenever you are in the woods: (1) Be sure you put out your match before you throw it away - and that your campfire is out before you leave it. (2) Be sure your cigarette is extinguished to the very last spark before you discard it. Do not let carelessness turn into a danger the cigarette you enjoy so much."

- - - - - - - - -

A representative of the Bureau of Efficiency called recently at the Washington office to determine whether the Forest Service could make available an area of approximately 1,000 acres of arable land as a site for a new reformatory to be constructed by the Federal Government to take care of the rapidly increasing crop of Federal offenders which is crowding the present jail system to the explosive point. A preference was expressed for arable land west of the Mississippi River close to main line railroad transportation and with favorable climatic conditions, first choice being Colorado, Utah, or Oklahoma. It was explained that the National Forests necessarily are rough, rugged mountain areas largely remote from main line transportation and that such lands as they contain of agricultural value had largely been listed and privately appropriated. Attention was directed to the large acreage of unreserved and unappropriated public land, in, for example, eastern Colorado, and a decision was reached to explore this possibility more fully before giving further thought to the availability of the National Forests. If, however, any Regional Forester craves a nice, new reformatory as an adornment to one of his National Forests opportunity may still exist to satisfy that craving, provided he will make his wants known promptly.

- - - - - - - - -

An editorial in The Baltimore Sun for September 3 says: "The reason that there is discouragement about reforestation is that it takes so long for trees to grow. The Federal Government and a number of States are creating forest reserves, protecting those that have long been in existence and in educating citizens to the importance of the matter. But it is hard to make the work vivid and imminent to the run of people. And waste in lumbering and forest fires accentuate the difficulties. Fortunately other factors are prompting private initiative to enter more actively into the campaign to save and restore our forests and their participation promises well for the future. As an illustration of what private enterprise is doing, the Niagara-Hudson Power system has set out 21,500,000 trees in New York and in the present year will plant 5,000,000 more. It is actuated by self-interest to protect watersheds upon which depends for hydro-electric power. Taking over bare and unattractive land and clothing it with timber helps to prevent floods and freshets in the winter and spring and to maintain a steadier flow of water in the summer months. Other public service corporations are following the same policy. In Maryland the promoters of the Conowingo electric enterprise have done some tree planting. Across the line, in the neighborhood of York, Pa., private capital has carried on planting on an extensive scale. ......"

- - - - - - - -

Region 3 wins first honors by its punctuality in submitting its report upon the public domain. Two neat and very well arranged folios with accompanying maps covering each of the two States of the Region were received in the Washington office September 10. A superficial review of the New Mexico and Arizona reports does not indicate that much will be left over for disposal if the Regional recommendations are adopted in toto.

- - - - - - - -

"The Determination of Hour Control for Adequate Fire Protection in the Major Cover Types of the California Pine Region," Technical Bulletin No. 209, is just off the press. This bulletin is based on the results of investigation undertaken by Show and Kotok and shows the means of an adequate hour control in keeping fire losses to the acceptable minimum. This publication should be read by every member of the Forest Service.

P. R. WORK

Topping the divide, the car swung down the creek and into the valley. Across the creek there was a typical mountain farm; log house, barns, outbuildings, a field, a little patch of hay meadow, timbered slopes.

"Over there" the Ranger remarked, " is where I did one of the hardest jobs I ever had to do." The rest of us waited expectantly.

"It was in the winter" he explained, "and the oldest boy, the one they depended on the most, was grinding fodder with an old gasoline engine. And he got caught in it some way, nobody knows how. They couldn't get the undertaker; the roads were all snowed in. So they telephoned for me."

"The engine had just dragged him in and he was frightfully crushed and mangled" the Ranger continued. "I had a terrible job getting him out of the machinery. The folks couldn't help much and you couldn't blame them. I just about had to take the machine apart to release the body."

"There wasn't anybody else to do anything for them, so I just took a day's leave of absence and set to work. Took me half a day to fix the poor kid up so that he looked fairly presentable. And there wasn't any minister available, so I had to conduct the funeral and make a little talk and lead the prayers. We buried him up there on the ridge in that patch of trees." - L. F. K.

TIMBER GROWN WHILE YOU WAIT

In 1901 a young man joined a reconnaissance party organized to investigate the best site for building a forest in the sandhills of Nebraska. Today that young man is the Chief of Range Management in the Rocky Mountain Region. In 1903 another young man went to the sandhills to help put the "forest" in "forest reserve". Today that young man is the Regional Forester.

Both of these young men have shown particular interest in the first timber-sale report from the Nebraska submitted by Supervisor Nelson as one of the milestones of 1930. During last winter, a detachment of junior foresters was detailed to the Nebraska to thin overcrowded stands of Scotch pine planted in 1910 and jack pine planted in 1911. Trees planted at that time were spaced as close as 2 x 6 feet and the survival was good. Thinning to about 700 trees per acre on 18 or 20 acres yielded 52 cords of wood which was sold to local settlers.

Other objectives than financial profit prompted the project. These objectives were attained. So it is not our purpose now to discuss in detail the costs and financial return - these and many other details are being worked out for application as the project continues. Suffice to say for now that trees can be planted, grown and harvested, and that neither centuries nor Site Quality I is required to do it. - H. D. C., R. 2.

WOLF PROOF FENCES

Good progress is being made in the construction of the wolf-proof fence on the Maxwell Allotment, on the Manzano Forest. Approximately fifteen miles have been completed with 48-inch woven wire, two barbed wires at the top and two at the bottom of the posts on the outside. A fine job is being done. Mr. Maxwell has a trapper with hounds on the job to kill off coyotes and cats within the enclosure. Two deer have tried the fence with poor success. Result: two deer killed. The Monte Prieto Ranch Company has likewise decided to fence thirty some miles of its allotment with wolf-proof fence. Sheepmen believe this expensive improvement will pay good dividends. - R. 3.

SOCIETY OF AMERICAN FORESTERS TO MEET IN DECEMBER

The Annual meeting of the Society of American Foresters will be held at the Wardman Park Hotel, Washington, D. C., December 29-31, 1930. It is planned to have Colonel W. B. Greeley, and Secretary of Interior Ray Lyman Wilbur lead a discussion on the Public Land Policy of the United States. Other speakers of note will set forth the progress being made in private forestry enterprises. It is planned to have one half day's discussion on the expanding service foresters are rendering to the public welfare. A full day will be devoted to technical papers selected to bring out the most advanced thought and accomplishment over a wide range of subjects of interest to the profession. In this connection it is planned to bring out through papers and discussion the latest findings on erosion and flood control as determined from studies in California and the Mississippi Valley.

There will be a birthday banquet to celebrate the thirtieth anniversary of the Society.

The railroads have granted special rates under the certificate plan. One half fare will be allowed on the return ticket provided one hundred and fifty come by rail and provided further that they obtain the proper certificate when purchasing the ticket to Washington and present it, properly certified and validated, when purchasing the return ticket.

The Wardman Park Hotel, one of Washington's finest, has granted unusually favorable rates;- Double rooms for $3.00 per person, single rooms $4.00, a few special suites for four persons. - W. R. HINE, Ex. Sec. S. A. F.

FOREST SERVICE
U S
DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT. ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XIV No. 39 Washington, D. C. September 29, 1930

NATIONAL SYSTEM OF EXPERIMENTAL FORESTS AND RANGES INAUGURATED

By L. F. Kneipp, Washington

On August 7, 1930, the Acting Secretary of Agriculture approved a National-Forest regulation which marks a new epoch in the forest-research work of the United States. The regulation is as follows:

"The Forester shall determine, define, and permanently record a series of areas of national forest land to be known as experimental forests, sufficient in number and extent adequately to provide for the experimental work necessary as a basis for forest production or forest and range production in each forest region, these areas to be dedicated to and used for research; also where necessary a supplemental series of areas for range investigations to be known as experimental ranges; and a series to be known as natural areas sufficient in number and extent adequately to illustrate or typify virgin conditions of forest or range growth in each forest or range region, to be retained in a virgin or unmodified condition for purposes of science, research, and education; and a series of areas to be known as primitive areas within which will be maintained primitive conditions of environment, transportation, habitation, and subsistence, with a view to conserving the value of such areas for purposes of public education and recreation. Within any areas so designated, except for permanent improvements needed in experimental forests and ranges, no occupancy under special use permit shall be allowed, or the construction of permanent improvements by any public agency be permitted, except as authorized by the Forester or the Secretary."

The purpose of the experimental forests is to make permanently available, for silvicultural, range, products, and other related forest research, areas as fully representative as possible of conditions in important parts of forest regions and large enough to meet present and foreseeable needs. In essence these areas are to be field laboratories for intensive investigative work. A secondary but hardly less important purpose is to provide for the demonstration of results, favorable or otherwise, of widely varying silvicultural and other forest practices. Each experimental forest is to be chosen on the basis that it adequately represents the subregion in which it is located as to forest types and sites and the conditions which underline types and sites (such as soils, climatic variations, and altitudinal range). Wherever possible each experimental forest is to include a "natural area" on which are to be preserved in an unmodified condition examples of the virgin growth of each forest or other vegetative type within each forest region, to the end that the region's characteristic plant and animal life and soil conditions shall continue to be available for scientific and educational purposes.

So far as can now be foreseen, from five to ten experimental forests will be required within each of the twelve or thirteen forest regions specified in the McSweeney-McNary Forest Research Act. Their areas will range from about 1,500 acres to about 5,000 acres, averaging about 3,500 acres, exclusive of the lands to be reserved as natural areas. They will not be so large as to impose any unnecessary burden of administration. Size will be governed primarily by the complexity of the type and by the growth rate of the trees species. The simpler the type and the higher the growth rate the smaller the area that will be required. In a subregion where it is not possible to find a satisfactorily representative single area it may be preferable to eatablish, as one unit, two or even three separate areas within easy working distance of the same headquarters.

For a natural area 100 acres is regarded as the minimum desirable under average conditions, but the acreage will vary with the type of forest involved, or, possibly, with climatic and topographic conditions. About a dozen such areas will be required in each forest region. Where areas suitable for experimental forests or natural areas can not be found on existing National Forests, consideration will be given to the possibility of acquiring suitable areas by gift or exchange, or, as a last resort, by purchase.

Experimental ranges will be established under the same principles as experimental forests.

On the experimental areas scientific and educational uses are to be dominant, commercial utilization and public occupancy subordinate. On natural areas commercial use will be prohibited and public use will be restricted as far as practicable. For convenience of administration and protection the areas will remain essential parts of the National Forests on which they are situated, but responsibility for their management and use will rest wholly with the Directors of the Forest Experiment Stations. The boundaries of the natural areas and the principles to govern their management are to be established by the Forester and are not to be modified except with his approval.

While natural areas will be established primarily to meet the needs of the Forest Service, their use by other research or educational agencies for purposes which do not conflict with Forest Service projects will be allowed under appropriate cooperative agreements approved by the Forester.

The readiness with which title to lands can be established under certain of the public-land laws gives rise to some uncertainty at present as to the ability of the Forest Service to safeguard the integrity of the experimental forests and ranges and the natural areas from adverse occupancy and use; but it is believed that as soon as the system has taken definite form and its vital importance to public welfare is established and recognized Congress will make legislative provision for preserving the areas permanently.

The reference in the regulation to primitive areas repeats the language of an earlier regulation under which a comprehensive system of primitive areas is now taking form on the National Forest.

WHY IS PINE RESIN?

From Scientific Principles Underlying the Technique of Streaking Pines, by L. A. Ivanov. Translated by L. J. Pessin, Southern For. Exp. Sta.

"The action of pine resin on injurious enemies is not only toxic, but is also mechanical. The thick flowing parts of the gum, that is, ethereal oil, is the toxic substance.

while the resin functions as the mechanical substance, which increases the viscosity of the gum. There is a whole series of investigations to prove that turpentine has a toxic action. Heller found that higher plants are killed by turpentine vapors within several hours. Bacteria, according to Flugre, are killed by turpentine in a concentration of water and turpentine of 1/75000. Turpentine is commonly used also for killing insects. Zeller showed that the presence of turpentine in agar even without terpenes up to 50 per cent retards the growth of mycelium of various fungi. In experiments with inoculated trees where the development of the fungus was measured according to its weight, it was found that pine sapwood becomes first infected when it has from 5 to 10 per cent resin, while the heartwood having greater amount of resin resists infection considerably longer. When trees lose water, the high air content of the tree becomes a favorable condition for the growth of mycelium because the uninfected sapwood often does not contain enough air for the development of the fungi. It is possible that the gum which absorbs greatly the oxygen of the air reduces its content in the neighboring tissues below normal.

"Concerning many insect pests, especially bark beetles, the gum apparently plays largely a mechanical role. Every time a resin duct is opened, the viscous gum is poured out with a force, covering the insect and killing it. Ips tridentatos when surrounded by a mass of fresh gum died in two minutes. If, however, the beetle is just smeared with the gum, it does not die. This explains the large infection of dry pines because at each disturbance of the water content, the resin pressure is reduced and the excretion of gum is weakened.

"Chipping injures the tree only by wounding it, which brings about a distutbance in its water content, and in that way enables its enemies to develop. The parts of the wood over the chipping or wound, receive their water in a round-about way and this difficult path causes a lowering of moisture in these parts of the sapwood, at the same time causing them to increase the air content of the cells and spaces that were at first occupied by the water. This increase of air content brings about conditions favorable for the development of the mycelium and the life of insects, such as borers and bark beetles which enter the tree through the wound. In a perfectly healthy tree where the water content and air content are normal, the enemies could not enter the tree because they do not have the right kind of conditions for development. At every disturbance of the air and water content of the tree, they appear and develop. The faster the wound is covered with resin, the less the danger for attack by enemies. The longer the wound remains uncovered, the greater is the risk for infecting the tree with blue stain. For that reason, rough, torn edges of the wound are especially injurious because in these infection begins easily. When the chipping is done by a dull instrument, even the most shallow streaks may cause infection and introduce entrance for enemies." - E. N. M.

NOW AND THEN ON THE WICHITA

By Charles Allen,

Squirrel seen through window walking a wire. Difficult feat of balance, but he managed to make several yards on top of a woven wire fence. Hopping out of a tree he landed. Destination, next post ahead. Hesitation and doubt of the outcome. Highly ornamental and attractive tail swishing the air in all directions to assist in balance. Finally concluded the short distance could be made in safety and started out.

Grotesque and awkward sight. His wonderful grace and activity for tree travel deserted him and with great difficulty he wobbled along. When about to lose balance one foot would wildly grasp a stay wire below.

Next post reached, he rested on his laurels, then jumped to the ground and scampered back to a tree.

Dolly, the pet deer, cautiously stepping out from a nearby oak forest. With neck stretched forward and ears raised to catch any unfavorable sound, she approched the office with measured and precise steps.

Standing out in front and looking inquiringly inside. No signs of a waiter. Her steps were turned toward Buffalo lodge. Again that head went out as far as the long, graceful neck would permit, and viewing surroundings from every angle, to center of lawn she went. No waiter their either. A little impatient now. That servant should know she had to produce milk for a pair of fawns. She stomped the lawn with dainty, cloven hoof, then started back toward the office.

Tin of kaffir corn taken from a sack and carried out. Handful held tantalizingly in full view. Dolly shot out a hungry tongue and licked a black nose, then approached cautiously, every nerve in her symmetrical body keyed to high tension. A few steps forward. A startled whirl and off toward protecting forest. Back she came, with an appearance of meekness and self condemnation at her foolish fright. This time finger tips were lightly touched with that attractive, black nose. Another whirl and off like a flash.

Further coaxing was of no avail More begging from the neutral zone, but beyond it she'd not come, so the kaffir corn was turned out on grass and left for her return, to be munched in peace.

Then a suprise. Not two, but three, dainty, little speckled beauties, came bounding from oak cover to their mother's side, sniffed at the kaffir corn, then raced around headquarters. Necks streched out, ears flat. A spotted streak of playful antics.

EDUCATE 'EM!

By H. H. Simpson, Inyo

Educational Episode No. 1.

During the summer of 1924 I became very pessimistic about the results that educational activities concerning prevention and suppression of fires were having on the traveling public And with good reason.

One of our permittees telephoned me that he had just finished putting out a fire at a certain place. I jumped in the flivver and drove the seven miles in a hurry. As I approached the spot he had described I saw a considerable volume of smoke Then the following incidents occurred. I ran the flivver out of sight.

Went up and examined the fire It was smouldering in a heavy pine needle duff, throwing a great smoke out of a spot about ten feet in diameter.

I went and hid in the flivver to see what would happen.

The following things took place.

An auto came by, stopped to put water in the radiator, saw the smoke, postponed putting the water in, looked around, stepped on the gas and went from there. Another auto came by driven by one of our sheep permittees. He stopped, got out, kicked around the fire a minute or so. Took a drink from a canteen, poured the balance in the radiator, lit a fag, and he went from there. Later he reported to me that he had put out a fire for me. Thanks a lot!

Another auto came by, slacked up, got an eye full, stepped on the gas and went from there.

The next car stopped, three men got out, took a look and a drink, and they went from there.

I waited until 14 cars had passed. Thought I had a good cross-section of the public's concern bvout forest fires, then I put the fire out and went from there, convinced of the futility of attempting to educate the public. I related the incident later to Mr. Hutchinson. That was about five years ago. He invited me to write it up. I didn't have the nerve. Not one of them had a shovel, or any inclination to put the fire out.

Educational Episode No. 2

During the present summer, almost six years later to the date, another fire was reported within a quarter of a mile of the one that occurred during 1924. Ranger Douglas Robinson and Administrative Asst. Parent went over to it. They found about 15 people there, who had constructed a fire line about ten feet wide around about a fifth of an acre. Using shovels, rakes, hands, feet, and sticks, the pine needle duff had been scraped aside to mineral soil.

There was great excitement and much chattering, with more people arriving every minute who pulled out their shovels and showed a willingness to get into the fight.

Ranger Robinson did the handsome thing with about a two-minute talk of prevention, suppression and appreciation, and every one was happy.

At this late date I accept Mr. Hutchinson's (now better known as Wiskers) invitation to write up the 1924 incident. Incidentally all the forest visitors had tools and an inclination to get into the fight.

Perhaps, after all, his efforts to educate the public have not been entirely futile. - From R. 5 Bulletin.

REGION 4 ADMINISTRATIVE RESEARCH

Administrative forest management research is being stressed greatly in Region 4. Thus the 1929 record shows work done on 193 sample plots. Of these, 82 plots are for the study of methods of cutting, 20 being in lodgepole, 44 in western yellow, 8 in Engelmann spruce, 8 in Douglas fir, and one each in aspen and alpine fir. Thinning plots number 49, of which 24 are in lodgepole, 12 in Douglas fir, 4 in western yellow pine and 9 in aspen.

Reproduction studies loom large with 49 plots established to study the effect of grazing, of which 14 are in western yellow, 10 in lodgepole, 8 in Englemann spruce, 7 in aspen, 2 in Douglas fir and 8 in other firs. Five plots were established for the study of reproduction after logging of which 4 are in western yellow pine and 1 in Douglas fir.

Two plots were established to study the spread of mistletoe and the possibility of its control by cutting. Brush disposal plots number 5. One beetle infestation plot is in lodgepole. Condensed from R. 4 Annual Investigative Report.

YE EDITOR DISCOVERS

According to the Chicago office of the Upper Peninsula Development Bureau, lurid reports about the great extent of forest fires in northern Michigan led many Chicago visitors to go elsewhere for an August outing. Criminally careless action of smokers and others in starting these fires thus resulted not only in losses to the timber owners but also in additional losses of business to the hotel and resort owners, garages and all station men, and in fact, everybody.

- - - - - - - -

Region 2 has played a dirty trick on the General Land Office. Two or three years ago recommendations were made for substantial additions to the Arapaho and Gunnison National Forests which, in conformity with the prevailing procedure, were referred to the Secretary of the, Interior for comment and concurrence. He in turn referred them to the GLO for investigation and report. As a result additions of limited portions of the areas were approved but by far the greater part was disapproved on the grounds that the lands involved contained no timber of any consequence and were primarily valuable for grazing purposes.

Armed with a high grade camera, the industrious Chief of Lands at Denver, carefully locating his position by section corners, compass bearings, etc., has made a photographic study of some of the lands thus classified as not valuable for forest purposes but chiefly valuable for grazing purposes. The resulting bound volume of 61 photographs, supplemented by maps showing camera points and compass bearings, is strikingly illuminating and particularly brings out the anomalous feature that the land approved for addition to the Forests largely consists of treeless scab rock, mesa top while the adjoining land, disapproved for addition, bears far-flung bodies of timber of obviously commercial character and size. Perhaps some other Region may find a similar study interesting.

- - - - - - - - -

An archives building in which is to be stored the records of Governmental activities is projected and will be one of the next of the new buildings to be built in the famous triangle south of Pennsylvania Avenue. The Forest Service has been called upon, as have all other units of the Federal Departments in Washington, to indicate how much cubic storage space it will desire in this new building. The records are to be kept in three categories - those prior to 1860, those from 1860 to 1917, and those from 1917 to date. We have been asked to indicate the amount of cubic foot space needed for letter files, manuscripts, card indexes, and larger material such as atlas size, etc. As the bulk of our records undoubtedly will be retained in Forest Service offices in Washington and the field for a considerable period, it is not expected that the needs of the Service will be as great as those of some other units which center most of their activities here in the city.

- - - - - - - - -

Four persons were fined in Utah last, month for leaving camp fires burning on the National Forests. In each case the culprit was traced, and when found voluntarily went to the justice's office. In one case a bad forest fire was started by a fisherman who left his camp fire burning.

- - - - - - - - -

George H. Manning, Washington correspondent of the Editor and Publisher, in his reiew of the meeting of Agricultural College Editors Association at Washington last month, says in the issue of August 30: "Even metropolitan dailies are paying more attention to agricultural news than formerly, according to the editors of the news services maintained by the agricultural colleges. One reason for this is the general interest in the work of the Federal Farm Board and the prominence of farm relief as a political issue in the last national election. A more fundamental reason, as the college editors see it, is the work done by the college news staffs in rescuring facts of general interest and real news value from the scientific terminology that heretofore made them unintelligible to Mr. and Mrs. Average Reader ......"

- - - - - - - - -

W. G. Wahlenberg is being reinstated, effective October 1, at the Southern Forest Experiment Station, from which he resigned early in 1929 to accept a position as forester at the Eddy Tree Breeding Station, Placerville, California. He returns as associate silviculturist, and will engage in studies of the management of second-growth pine.

MEN QUIT MONEY-MAKING TO PICNIC AMID BIG TREES OF CALIFORNIA

From B. C. Forbes Syndicated Article

Can you imagine a thousand responsible men of affairs betaking themselves out of the world of hustle and bustle and money-making, hieing off to the heart of a forest, and amid giant redwoods thousands of years old, holding a picnic, camp-style, for three weeks, connected with the rest of mankind by only one lone telephone?

Out here in the West men go in more for the out-of-doors. They go in more, too, for human fellowship, for fraternizing, for friendliness, for respite from the daily toil of the mart, office, factory, shop.

The Bohemian Club of California, composed, mostly, of men who have made some mark in their walk of life, own a "grove," dotted with camps of all varieties from the humblest tent to almost palatial structures, about a hundred miles from San Francisco. Under its auspices is this unique outing.

On entering, a placard, "Today's Stock Market," attracted my attention. It carried this report:

"What the h--- do we care?"

When, later, I expressed a desire to procure an evening newspaper, my host promptly and emphatically ruled me out of order.

"Forget it!" he commanded.

All "shop" was forbidden. The keynote of the whole gathering is sounded annually at the opening, when the first elaborate ceremony is the burying, in effigy, of "dull care."

Music sounds through the forest daily and nightly. A great orchestra, composed wholly of members, plays in the evenings by the side of a lake sentineled by redwoods hundreds of feet high and thousands of years old, the listeners squatting on the Chinese-lit banks and the edges of the woods. Men sit on logs around a central camp fire, talking. Vocal concerts are given. The musical and dramatic piece de resistance is a grand-scale play, composed exclusively for this one performance, and staged in gorgeous style in an open-air theatre the like of which is not to be found the wide world over. Hundreds take part. Every seat is occupied - yet from the rise of the first to the drop of the last curtain you could hear a pin fall.

But it is neither the music nor the drama, appealing though they are, that distinguishes this fraternal assembly from all others. It is what all call "the spirit of the grove."

Dignity is left behind. A most punctilious New Yorker, distinguished alike for his professional eminence, his blue blood, his sartorial perfection and his capital-S society manners, was greeted on his first stroll through the woods:

"Hello, Old Whiskers, who let you in here?"

After recovering his breath, and after undergoing further verbal hazing, he caught the spirit of the place - and had, he told me:

"The most enjoyable experience of my life."

A military general, introduced at one camp, was greeted by the first to shake his hand:

"Hello, Corporal!"

He winced. Promptly he became known all over as "The Corporal." And now, when he writes to any Bohemian, he signs himself, "The Corporal."

Herbert Hoover, when Secretary of Commerce, attended - he still maintains his camp. The toastmaster of one function where "Herb" was expected to speak, began an introduction so flowery that the guest blushed; for half an hour the toastmaster narrated the virtues and achievements and glories of "the next distinguished speaker." Hoover meanwhile squirming - and then called upon a well-known wit to make the speech of the evening!

Dignitaries, bankers, captains of industry, men of letters, railway presidents, kings, of commerce - all become schoolboys again, shed their pubicly-worn masks, become their real selves, and revel in this taste of back-to-nature, back to unhedged fraternity, back to the simplicities and frolics and irresponsibility of boyhood.

You can buy a seat on the New York Stock Exchange for half a million dollars;but money cannot buy membership in this Bohemian club. You have to be the right kind of a human.

What a pity our Eastern magnates, our Eastern money-chasers, our Eastern slaves to getting, do not organize something of this kind. It might help to humanize them, help to broaden them, help to deepen them, help to enrich their hearts, help to cleanse their souls.

And, not least, it might teach them to fraternize somewhat more with their own sons and thereby lessen the tragedies which too often befall youths deprived of parental love and intimate fellowship.

CAN YOU BEAT IT?

The refuse boxes put up on the Gallinas Canyon recreation area on the Santa Fe Forest are surely serving the purpose. On a recent trip over the area the cleanup part amounted to nothing. All cans and refuse had been put in the boxes and camp grounds were all much cleaner than during the past year. Signs on this area are put up on prepared board backs, that is. signs indicating the different trees and containing fire warnings. On replacing signs this spring not one had been written on and all were in good shape, showing only wear caused by the weather. Some of the enamel camp ground signs didn't fare quite so well, looked as though they had been used as a target for rocks. This was about traced down to local boys in their travels over the area. - Region 3

IT HAPPENED IN SEPTEMBER

"Tamalpais last night flamed to its topmost peak like a volcano. The great canyon of the Lagunitas, along the right fork of the creek, sent up clouds of flames and cinders, a southeasterly wind assisting the conflagration in its ascent to the montain ridges. The territory over which the fire extended is estimated at seven miles in length and three and a half in width. The greatest portion of the country burned over is the Throckmorton ranch - which joins that of Shafter along the crest of the Tamalpais. Nothing approaching the fire has been seen since the great conflagartion of 1859, which lasted for nearly 3 months". San Francisco Chronicle. September 19, 1881.

Conservation implies the best possible use of what resources we have, while working intelligently with the future for the augmenting of those resources wherever possible."

At Drainland, South Carolina, the effect of thirteen annual burns is quite noticeable as evidenced by the ground cover. Sixteen species of herbaceous vegetation exclusive of grasses were collected on the unburned plot as compared with seven on the burned area. Several perennials were found on the unburned plot and but one on the burned . Grass apparently was more widespread on the burned land. - Appalachian For. Exp. Sta.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER.
> Theodore Roosevelt

VOL.XIV NO.40 WASHINGTON, D. C. OCTOBER 6, 1930.

INTER-AMERICAN CONFERENCE ON AGRICULTURE, FORESTRY, AND ANIMAL INDUSTRY

By E. M. Bruner, District Inspector, Central States

¿Habla usted espanol? This much Spanish at the very least was incorporated into the vocabulary of every forester who attended any sessions of the Inter-American Conference on Agriculture, Forestry, and Animal Industry held in Washington September 6 - 20. This conference, the first of a series to be held under the auspices of the Governing Board of the Pan-American Union, was attended by some 55 official delegates and about 175 consulting experts from the 21 countries which make up the membership of the Pan American Union. The broad aim of the conference as expressed by the Governing Board of the Pan American Union, was three-fold:

(1) To define the outstanding problems in each country which may be solved by inter-American cooperation.

(2) To discuss the policies and methods of procedure to be followed in the cooperative solution of these problems.

(3) To consider the establishment and location of research stations or laboratories, and the means of financial support therefor.

The topics for discussion were as comprised in four main groups:

I. Problems dealing with research in agriculture and forestry development.
II. Problems of agricultural economics.
III. Plant and animal diseases and pests.
IV. Commodity production problems.

The interest displayed in forestry throughout the conference was highly gratifying, and perhaps greater than anticipated by even the most optimistic among the foresters particularly interested in inter-American problems.

Major Stuart spoke before two separate sessions of the conference, and papers were presented by Koehler of the Lab. and Chapline. Among other American foresters who spoke or presented papers were Col. Geo. P. Ahern, Prof. D. M. Mathews, W. T. Cox, W. R. Barbour and Tom Gill.

Mexico sent a delegation of four young foresters and one other man who is greatly interested in forestry development. Two of the four foresters are employed in the Mexican National Forest Service. All five of these Mexican delegates took active part in the forestry discussions. The four foresters spent a good part of two days at the Forest Service headquarters in the Atlantic Building where they were most cordially received by the various Branch Chiefs and other officials in position to explain the various phases of Forest Service organization. They were provided with numerous Forest Service publications, charts, graphs, etc. These young foresters from our sister republic evinced the keenest kind of interest in our organization and our major forestry problems. As further evidence of their interest they made plans to visit the Forest Products Laboratory at Madison and probably one or two of the Forest Experiment Stations before returning to Mexico. ;Buen viaje, amigos!

There were a number of most enjoyable social functions in connection with the conference. These included a reception to the delegates by President Hoover on the south lawn of the White House grounds; two luncheons at the Pan American Building, one by the Secretary of State and the other by the Governing Board of the Pan American Union; a luncheon by the Secretary of Agriculture at the new Department of Agriculture Building; an evening concert on the esplanade of the Pan American Building by the United States Navy Band, most ably assisted by four visiting artists, three from the Argentine and one from Mexico; and last, but in so far as foresters are concerned certainly not least, a banquet at the Cosmos Club by the Society of American Foresters.

The Society of American Foresters' banquet, given on the evening of September 17, was an affair which every forester who had the good fortune to attend must surely always cherish in his memory as one of the unique and outstanding occasions of his career. Approximately 60 men sat at the banquet table, at least half of whom were visiting delegates from the twenty Latin American countries. The banquet menu was superb, and the few speeches made were short, snappy, and in every way entirely suitable to the occasion. The visiting guests gave every evidence of being highly pleased.

Paul G. Redington, President of the Society of American Foresters, presided in a manner that did the Society distinct credit. Major Stuart was at his best, which means his speech struck a happy and responsive chord. Dr. A. F. Woods, permanent chairman of the conference, greatly pleased his listeners by the happy vein in which he spoke, as did also Dr. L. S. Rowe, Director General of the Pan American Union. Dr. Rowe first spoke briefly in Spanish and then somewhat more at length in English. Dr. Julio Riquelme Inda of the Mexican delegation and Dr Roberto Alamo Ibarra of the Venezuelan delegation captured their audience with the fervor and eloquence of their addresses, and this in spite of the fact that they spoke in Spanish, a language which but few of the Americans present understood.

An outstanding feature of the banquet program, and of the entire conference as well, was the remarkable exhibition of ability in interpreting English into Spanish and vice versa by Mr. Benjamin Cohen of Chile, the official interpreter for the conference. Mr. Cohen simply astounded and captivated both the English speaking and Spanish speaking guests with his eloquence in both languages, and his feats of memory as displayed in the verbal translation of entire speeches from one language to another.

In bringing the ceremonies to a close, President Redington firmly established himself in the hearts of the Society's Latin American guests by addressing them thusly:

"As you would say in your own language 'hasta la vista, amigos mios, y buena suerte.'"

A LETTER FROM WILL C. BARNES

Steamer El Salvador
Off the coast of Guatemala
September 3rd, 1930

My Dear Stuart,

I brought with us that wonderful bound book of letters that the boys - yourself among them - wrote me on my last birthday.

What a splendid idea it was and how much we – for the Madam has enjoyed them as much as I have – have enjoyed them. I'm reading them a few every day so as to sort of get them all fixed in my mind.

Thank you for your contribution. It was greatly appreciated. We have just left the little harbor – no not a harbor for we had to camp out in the ocean and unload into lighters – off Champerico.

Yesterday morning at six we took the narrow gauge train for the city of Guatemala some hundred miles up the side of a volcano in Guatemala. Its a narrow gauge road three feet wide and winds and twists around the side of the volcano like a snake.

The city lies five thousand feet above sea level and we found the weather delightful after the tropics along the coast. What interested me was the vegetation, timber, etc. going from one zone to the other. First the dense tropical jungle, gradually it gives way to timber – the huge Ceiba and other tropical trees.

Then the banana, sugar cane, Kafircorn, coffee and all that kind. At times they all merged so that it was a regular tangle. American corn – great fields of it tall and with lots of leaves but only one ear to a stalk. Bananas acres of them. The coffee grows under dense shade and one has to look carefully for the trees. Miles and miles of sugar cane. For a good many miles we found millions of grasshoppers which had played hades with the banana trees. Owing to the heavy vegetation they had not been able to fight them very successfully altho they were trying all sorts of things.

Closer to Guatamela city we found miles of beautiful avenues along a very good auto road formed by a fine species of Cypress very tall and shapely, fine for telephone poles and such. Evidently they had all been planted. Also here we found the pines all round us. It was a land of Palms and Pines for sure.

You would be astonished to see how much of the land is cultivated. It's a heavy black volcanic sand exactly such as you can see east of Flagstaff, Ariz., on the Canyon Diablo plains. Very rich they tell us and growing anything. The farms are small but here the native owns his farm and they are pretty good farmers as such people go.

What they seem to need is better seed especially for their corn. There were miles and miles of excellent pasture lands but comparatively few cattle and they were rather poor in grade but always fat. The city astonished us. It's far and away the most interesting attractive place we have ever visited. Over 120,000 people with fine homes and surroundings. It was completely wrecked in 1916 by an earthquake and in rebuilding they have a law that no house in the town shall be over one story high.

There was more color there than anything we so far have seen. Hundreds of Indians in gay costumes. The women and men carry the most astounding burdens on their heads. Anything from an upright piano to a ten day old baby balances on their skull.

You see the old and the new everywhere. An ox cart stops the movement of a Packard in a narrow street and they may honk their horns and all that all they want to but the driver of the cart moves serenely along till he comes to a wide place where they can pass and then he lets them by. The streets are paved with huge blocks of granite sixteen inches square and six thick. Which makes a lasting if not a most easy pavement on auto tires .

We got back to the ship about half past twelve at night. Had a very comfortable observation car with a fine lunch counter from the ship, and slept and ate most of the way down.

The ship lay out from the small dock over a mile and we had to be swung down into lighter with a chair both off the dock and again onto the ship. What with a heavy swell going it was not the easiest matter in the world and sometimes a chair with a timid female lady in it would swing above our heads for several minutes waiting the barge to get under her.

However that is the general way all along here so we have gotten fairly well used to it.

We shall be in Frisco the 15th and have only two more stops which we all regret for it has been a lovely ride every minute of the time. The ship is so comfortable and the food grows better with each meal - which I'm sure you will agree with me is rather unusual. Most all the way from Panama we have been in sight of land and into a new port every other day. What they load from ships is marvelous. Everything in a Montgomery Ward catalogue.

We enjoyed seeing Panama again after our 1913 visit when it was being built. It's a good job and we should be proud of it. We change passengers almost every port. Mostly native people going from city to city. The crew is Chinese and we like them very much. Some days we have seventy five in the dining room at once and the next only twenty five mostly the passengers who got on at N. Y.

We shall be in Frisco for a week or so and then drift down the coast to winter at Phoenix.

Our very best regards to yourself and the family. We shall always look back with pleasure to our friends in Washington and be glad to see them once again - say about December 1931.

With sincere regards Yours
/s/ WILL C. BARNES

FOREMAN TRAINING

By H. T. Gisborne, Northern Rocky Mtn. Exp. Sta.

The scarcity of satisfactory foremen available for fire crews recently has been drawing marked attention in Region 1. How to train our best temporary men to serve as fire foremen is a real problem. Obviously one of the first steps is to study the situation and select the specific features to work upon. As shown by the following outline, other businesses encounter the same problem and this segregation of Waste of Labor by the supervisor of safety and training for the American Rolling Mill Company is so basic that it seems to apply readily to our case as it is. Undoubtedly it could be modified slightly to serve as a list for camp bosses to use in making sure that they are as up to the minute in their supervision as rolling mill bosses are supposed to be.

"Preventable Waste of Time

1. Idleness of Men on the Job.
   When there is idleness, it is due to:
   (a) Poor supervision—foreman is not getting around.
   (b) Lack of asserting authority—good fellow attitude.
   (c) Too many men on the crew.
2. Lack of Proper and Sufficient Training.
   (a) A foreman should train his men how best to do the job. Show them how.
   (b) Check his men to see that they are following instructions on best methods.
3. Poor Planning by Supervision.
   Some men are "doers" rather than planners. This results in the foreman frequently doing the job himself. He should:
   (a) Study the job to see how it can best be done.
   (b) Place men to the best advantage; some men are more proficient in certain work than others.
   (c) Plan schedule of work to keep all men busy.
   (d) Arrange machinery for maximum production.

4. Holding Men for Emergency.
   This usually means keeping men on the job with no definite work for them. The employment reserve is set up to take care of extra needs. Use this service.
5. Lack of Full and Proper Instructions.
   A foreman should:
   (a) Tell his men just what is to be done.
   (b) Tell them why it is being done a certain way.
6. Tardiness--Quitting Early.
   A foreman has a right to ask his men to work full time. When these practices are prevalent, it is due to:
   (a) Improper supervision--lack of authority.
   (b) Good-fellow attitude on part of foreman."

FERN LEAF SALES

By W. G. Weigle, Snoqualmie

Referring to F. W. Cleator's article concerning the sale of fern leaves in the August 18 number of the Service Bulletin, wherein he finds that Reg. S-21 of the Manual takes care of such sales:

A considerable business has developed in western Washington in the shipping of fern leaves, huckleberry, and moss of various kinds to the cities of the central West and East coast for decorative purposes. If the fern gatherers could find a market for the ordinary Flag fern, we might look with more favor upon the industry but they gather chiefly the Sword, Deer, and Maidenhair ferns and evergreen huckleberry (vaccinium ovatum). Many carloads of these and other evergreens are shipped from western Washington to eastern points annually. Before accepting the statement that gathering fern leaves is beneficial to the plant, take into consideration the fact that the leaves of the fern carry the spores which take the place of seed of the more highly organized plants and that the leaves of the fern are just as important in the metabolism of plant food as they are on any other plant.

On land that is going to be logged in the near future, the gathering of ferns and other evergreens in commercial quantities does not appear to be objectionable inasmuch as they will be destroyed in the operation, but there are many reasons why the Forest Service should look with disfavor upon the practice of gathering ferns and other evergreens in commercial quantities from areas not to be logged.

"The Washington State Society for the Conservation of Wild Flowers," being fully alive to the scenic value of ferns and other native evergreens and realizing the destructive methods used in their commercial exploitation, is making a determined effort to prevent the extermination of such marketable species as evergreen huckleberry and the several varieties of ferns which are in great demand by the florists throughout the country.

The Forest Service can do our present and coming generations a great service by helping to regulate and retard the commercial exploitation of our scenic evergreens.

WHO CAN BEAT THIS RECORD?

Sept. 14 - 30 At Home
Washington, D. C.

Mr. R. Y. Stuart:
Forester:

It is a great pleasure to me to receive such a nice letter from you, on my retirement. I thank you and will always think of you all with the kindest thoughts. I never was late in all my 25 years.

Sincerely

/s/ H. D. BROWN

YE EDITOR DISCOVERS

A recent decision by the Comptroller General has eliminated one of the obstacles to the expeditious purchase of lands under the Clarke-McNary Law. No lands can be purchased until all taxes due or accrued have been paid, and many land owners are so short of cash that they are unable to pay taxes in advance of receipt of the payment for the land. This frequently has created a stalemate. However, the Comptroller General has now held that under certain prescribed conditions the Secretary of Agriculture can pay directly to the county out of the agreed price for the land the sum representing the due and accrued taxes, the owner of the land to receive the remainder. This decision should bring joy not only to Regions 7 and 9 but also to many impecunious land owners and to many County Treasurers to whom the early payment of accrued taxes on lands will be a great source of financial relief.

- - - - - - - -

The large amount of Power Commission work done by the Forest Service on power projects makes the following excerpt from the minutes of the Commission's meeting of June 20 of especial interest: "The Executive Secretary reported that as the fiscal year draws to a close it is evident that the activities of the year have brought the primary business of the Commission up to a satisfactory condition. Notwithstanding the highly controversial character of a number of cases, the docket has been practically cleared of major applications contemplating immediate construction. Investigations are in progress on several license applications filed in the past thirty days. The efforts toward clearing up the accumulation from past years have resulted in the issuance of more than twice the number of licenses authorized in the previous year and a substantial reduction in the number of cases awaiting action."

- - - - - - - -

In the Julius Rosenwald Museum of Science and Industry, Chicago, which is to be opened in 1932, the Forest Service will have permanent space allotted for exhibit material. The hall in which the Forest Service exhibit space is to be located will contain, among other things, a replica of a lookout station in the western mountain country, partially surrounded by a large panorama on which shots with an Osborne Fire Finder can be taken by the visitor. There will also be a diorama picturing a fire line, a fire tool cache with the various tools, a collection of pumps and torches, telephone equipment, a case of material showing fire effects on trees and wood, and an automatic motion picture showing fire fighting. The only requirements imposed on the Forest Service are that the exhibits which will be placed in this hall shall be appropriate and well-executed so that they will fit into the scheme of the rest of the hall. We shall be glad to have suggestions from any of our Regional PR Evangelists who would like to have their Regions represented.

- - - - - - - -

When Cap. Winslow appeared before the Budget Bureau the other day to explain how effectively the Madison Laboratory could spend an additional million or two dollars of appropriations, the parapharnelia with which he was equipped warranted the apparent feeling of apprehension on the part of the Budget Bureau Committee. Included in these exhibits was a mace-like rod wound with leather thongs which readily might have been regarded as a new form of blackjack or a tear bomb or some other like instrument of force and coercion, but as he waxed eloquent in his oration as to the functions of the Lab. it developed that this in strument was a large scale model of a wood fiber, illustrating its outer envelope, its fibers and cells, its fusiform bodies, its atoms, electrons, nuclei, etc. Possibly the Budget Bureau officials saw in this exhibit further proof of the fact that research consists in part at least of learning more and more about less and less, but they gave no indication of their innermost thoughts, listening in silence to the verbal explanation.

- - - - - - -

Congress appropriated $250,000 to prepare and present Government exhibits at the Paris International Colonial Exposition in 1931. The Forest Service is being called upon to prepare data on Alaska and Porto Rico.

- - - - - - -

John R. Curry, Assistant State Forester of Maryland, has accepted appointment as Associate Silviculturist at the California Forest Experiment Station, where he will engage in forest fire research.

OUR BIG TREE DEPARTMENT

DECIBELS - WE EAT 'EM ALIVE

Why all this fuss and flurry by the Washington office over the reverberating decibels from a few tuneful riveting machines on the skyscraper back of the old Atlantic Bldg.? Is it possible that the experts who have been preaching efficiency to the field these many years have been unable to inculcate the principles of self-concentration in their own force? Perish such a thought! It must have been the sweltering heat that broke down their resistance and caused "our fellow workers" to pour forth these sorrowful lamentations.

Decibels! We live on them, have lived on them, and expect to continue living and thriving on them for many years to come. Ninety-nine decibels, or even 999 of them would be as soothing as Mendelssohn's "Spring Song" to our ears, accustomed as they are to the din and clamor of the western civilization that ebbs and flows through the Ferry Bldg. If you have ever been in the San Francisco "Beehive" of the Forest Service, modeled after the bowling alley style of architecture, you will appreciate what we mean.

Let us pause a moment under the glare of the artificial light in which we work, polish up the bifocals for our fast failing eyes, and take an inventory of the various genera and species of decibels that daily beat upon our cracking ear drums like the thunder of an angry ocean surf.

Fourteen typewriters that sound like an army of woodpeckers working on a hollow log. Four adding machines that purr and jangle. Three men dictating a la the great open spaces. One impassioned legal argument ipso jure. Salesmen expounding the marvelous merits of a 10-ton whatnot. The endless tinkling of telephone bells. Ferry boats whistling and spouting steam as they pull out of the slips. Streams of street cars grinding and squeaking around the Loop. The crackling roar of the amphibian air ferry. The honk and rumble of auto traffic through the truck subway. Snorting freight engines with clanging bells and clanking freight cars. The strident notes of a brass band down to greet Hollywood's latest talkie heroine. Screaching fire engines tearing down the Embarcadero. The rumble of 100,000 commuters' voices, and the swish, swish of 200,000 feet on marble.

The messenger boy with the morning mail interrupts our reverie. Ah, a new circular letter - "What the Forest Service needs is greater efficiency on the part of its officers in ......" We gaze about us, scratch our head, smile broadly, iniital the letter and throw it in the file basket, and go back to work. - From D. 5 Bulletin

WHY DO THEY DO IT

By F. K. Lightfoot, Cascade

Will some chemical engineer kindly step forward and tell us what to mix with the paint on trail signboards of wood so it will be distasteful to bear? I have counted as many as 10 signs in one day's trip, either wholly or partially destroyed. Some were merely torn down or split in two, while others were chewed into fragments. On one section of trail, 6 signs in succession were torn down by the same bear, judging by the tracks.

There are three solutions to this problem. First, use the signs for bait and set traps. Second, place signs high enough so that bear can not reach them without climbing, which the bear probably would not do. Third, and the most logical one - mix a certain chemical with the paint so the bear will not like it, or make signs of a certain kind of wood that he will not like so well. The sign-eating bear is a serious problem in certain localities. Let's hear of some better formulae from someone who knows.

Foster Steele suggests that the reason bear tear down the signs is in hopes some Forest officer will get lost and he (Bruin) will get a square meal. I believe that if a bear got a good bite of a tough old Ranger, he would be cured of tearing down trail signs. Still another theory would be to cross the signs with a skunk and porcupine.

Early Cattle Branding

Many of us have accepted the branding of cattle as a typical western institution. It is interesting to note, however, that this method of marking live stock is not peculiar to the West nor a recent development. In early colonial days domestic stock was permitted to roam freely, and commons or community pastures were found in practically every settlement. Ownership was established by a system of brands or earmarks registered with the town authorities in New England and with the county clerks in the Middle Colonies. In 1664 we find the general court of the Connecticut Colony passing the following law:

"For the preuenting of difference that may arise in the owneing of Cattle that be lost or stree away, It is ordered, that the owners of any Cattle within these Plantations shall earmarke or brand all their Cattle and swyne that are aboue halfe a yeare old (except horsses) and that they shall cause their seuerall marks to be registered in the Towne booke; and whatsoeuer cattle shall be found unmarked after the first of May next shall forfeit 5s a head whereof 2s. vid. to him that discouers yt, and the other to the Country."

The brands, judging from the reproductions, were fully as distinctive as those of the present day, which they greatly resemble. - E. N. M.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER.

Theodore Roosevelt

Vol. XIV No. 41 Washington, D. C. October 13, 1930

NEWS FROM THE RADIO FRONT

The new radio equipment devised by D. L. Beatty has been undergoing a tryout under actual field conditions on the Columbia National Forest this summer. The following account by A. Gael Simson of some of the experiences encountered in the tests will be of interest to members of the Service.

Experiments in short-wave radio communication have been in progress on the Columbia National Forest for approximately a month and a summary of results and conclusions to date seems in order.

"There are 7 portables and a central radiophone station in operation. The central station is at the central dispatcher headquarters, Hemlock R. S. The portables are located at various distances away from the central station ranging from approximately 15 to 45 miles air line.

"One lookout has radio as his sole means of communication. The other portables are being used by road and trail crews and are moved from point to point as the crews move.

"The portables communicate with each other and with the central station by means of the Continental code and the central station uses voice. Contacts are made at pre-arranged intervals.

"The portable station operators are members of the short-term force on the Forest without previous knowledge of radio and operate their stations in addition to their regular work. Apparently the procedure was to pick some member of a crew, give him a manual of instruction, a couple of days training in setting up and operating the set, and turn him loose. There seems to have been practically no follow-up instructions and apparently little need for it.

"I have operated the central station from time to time in order to keep in touch with the progress of the experiment. Within my observation, the portables have put out a good steady signal, consistently reliable. This was no surprise in view of the unprecedented ruggedness, both mechanical and electrical, incorporated in the sets. As an example of the steadiness of the emitted wave, I copied one of the portables all of one evening and the next day without touching the receiver other than to turn it on.

"The power output of the portables is small but seems to be ample for ordinary conditions. I have copied a portable with ease at a distance of 350 miles air line. Hence, it would appear that the safety factor for transmission over a distance of 25 miles, which I believe was the objective, is large.

"The portables have been moved about considerably both by truck and pack and have stood up under it satisfactorily. No special care is taken in preparing the equipment for shipment, - merely the lids are closed and the apparatus is ready to go. The tubes are not even removed from their sockets. One or two receiving tubes have gone bad but this is normal, expected, and provided for.

"While the behavior of the equipment is a matter of no surprise to me, knowing the rigid tests to which it had been submitted, the performance of the operating personnel of the portables is no less than astonishing. These men started out a matter of a month ago, green and untrained. Yet today they are handling their apparatus like veterans. They are able to keep their transmitters in tune and operating efficiently - no mean accomplishment. Of course, they are aided by the nearly fool-proof construction of the equipment. It was anticipated that it would be some time before the operators would have mastered the Continental code; so a special code was devised wherein certain dot-and-dash groups meant certain words, phrases or even whole sentences. As yet, there is no instance of this code having been used. The operators stepped directly into the use of the Continental code. It is true that they do not send or receive very rapidly, nevertheless they do send clearly and accurately. I have never yet had to ask an operator to repeat a word because of poor sending. It appears that the special code is just about obsolete, at least with the present group of operators. I believe the operating end of the experiment is not nearly the bugbear anticipated.

"At the central station the situation is not nearly so cheerful. Reception has been hampered by interference noise from the hydro-electric power plant. In spite of the fact that to date efforts to eliminate the noise have been only partially successful I believe it can be reduced to a point where it will not seriously interfere.

"There has been some interference from broadcast station harmonics. If the Radio Supervisor cannot make the broadcast stations supress their harmonics, the remedy is to secure permission to slightly shift wave. The central station transmitter, which is *not* Forest Service construction has not operated satisfactorily. Much of the time the voice has been nearly unintelligible. (I mention it because of its effect on the whole communication situation). The result has been to greatly slow up the handling of traffic - which is no small matter when a large fire is in progress. Also it has put an added and unwarranted burden on the portable station operators. Finally the radiophone station failed altogether but communication was maintained by substituting one of the portables for the radiophone transmitter.

"I believe that in central radiophone design the aim should be towards high percentage of modulation and crystal control rather than more power and less efficiency. To sum up, the tests to date indicate that the portables in their present form will furnish reliable communication over the Forest. The percentage of failure will probably be less than over the normal Forest Service telephone lines. By this I do not imply that radio is a substitute for telephones - rather it is a supplement to them. However, it does provide quick communication under circumstances where a telephone line would be practically impossible.

"From a communication standpoint there are two important questions to be answered, namely, What is the traffic saturation point for a central station? and Is this point ever reached? It appears likely that two simultaneous project fires in addition to the regular schedules with the portables would overload one central station. A number of ways to meet such a situation suggest themselves but they will not be discussed here.

"In conclusion let me say that Mr. Beatty's design of the portable transmitter-receiver is an outstanding piece of work and I predict that within a short time after the data on these sets are made public his type of construction will be used by other organizations interested in portable equipment, not excluding the Army and Navy."

CHESTNUT RECOVERING

John E. Aughanbaugh in a new bulletin "Recovery of the Chestnut in Pennsylvania," just put out by the Pennsylvania Department of Forests and Waters, has some interesting news for foresters about the blight-affected chestnut. Following are his conclusions:

The chestnut blight made its appearance in Pennsylvania in 1909. It was observed first in the eastern part of the State, from where it progressed rapidly to the central and southern and later to the northern and western parts. Now it is present in all parts of the State where the chestnut is found.

The loss of the chestnut was particularly serious, for it was the commonest and most valuable tree in Pennsylvania at the time the blight made its appearance.

The destruction of the chestnut was so rapid and complete that the outlook for its future soon became very discouraging, and many persons still think it is hopeless.

During the past few years, reports have been coming to the Department of Forest and Waters indicating that the chestnut may be starting slowly to work its way back into the forests of Pennsylvania. These reports are being received in increasing numbers. The State-wide importance of this tree suggested the need for a special study of the situation. This study was undertaken in the fall of 1929, and some interesting preliminary observations and conclusions are now available. These recent studies indicate that the chestnut shows the greatest promise of recovery: (a) on areas where the chestnut was cut before it was completely killed by the blight, (b) where sprouts originated from small stumps or seeding-sprouts, (c) on slopes with a warm southern or southwestern exposure, and (d) where overhead shade is not too dense.

The persistent sprouting ability of the chestnut is its main hope. For 20 years it has persistently met its death loss with repeated crops of new sprouts. In some regions, as many as eight different generations of sprouts have already appeared. The blight has not yet been able to kill all the root systems from which sprouts develop. These sprouts are the main battle-ground of the blight.

In many coppice clumps, individual sprouts are becoming larger with each succeeding generation of sprouts. Many sprouts, three to four inches in diameter, are now growing in the forests. The largest sprout recorded was five inches in diameter and 35 feet high when 12 years old. This sprout now carries three blight cankers, none of which appears to be serious.

Many of the larger sprouts, ranging from three to four inches in diameter and from 6 to 12 years old, are beginning to bear fully formed chestnut burrs containing a fair percentage of mature nuts. This indicates that the chestnut is resisting the blight, or that the disease is becoming less virulent.

More cankers are now required to kill a sprout than in the early days of the blight. It is not uncommon to see a sprout struggling tenaciously with as many as a dozen cankers upon it. In the early days of the blight, a single canker was often sufficient to kill a tree.

Marked changes in the general appearance, form, and virulence of the blight cankers have been noted. The swollen hypertrophied type of canker is now becoming more common. This type, caused by the tree's efforts to grow new wood to resist the disease, appears to be less destructive than the round lesion type, which was most common in the earlier years of the blight. Inactive or healed cankers are becoming more numerous. In many sections of Pennsylvania numerous partially healed cankers can be found.

Sites upon which the chestnut has been able to develop into the largest and most thrifty sprouts, despite the destructive effort of the blight, offer the greatest hope for its future development. Only under favorable conditions can the chestnut be expected to work out its salvation. No practical human control measures have yet been found, and it appears that nature must work out its own method of control.

The peak of the chestnut blight has passed too recently to definitely foretell its future developments, but each year gives additional evidence signifying that this destructive disease has passed its climax in Pennsylvania. There is a growing justification for the hope that it may eventually recover much of its lost ground in the forests of this Commonwealth.

BRINGING HOME THE BACON

By L. F. Kneipp, Washington

To the average field officer of the Forest Service, appropriations mean only the prompt receipt of salary and expense checks and allotments for the employment of necessary field assistants or project men or the construction and maintenance of such administrative essentials as ranger stations, barns, store houses, lookout houses, trails, roads, etc., or the purchase of desirable pieces of equipment such as trucks, tractors, fire pumps, etc. Few of them know much about the procedure which establishes the connection between the funds in the United States Treasury and their translation into these concrete utilities for the prosecution of Service work.

At one time estimates for appropriations originated in the field probably eighteen months before the money became available for expenditure. During the past few years the Forester has been following as closely as possible the five year financial plan in requesting increases in appropriations. This plan was made after a thorough consideration of needs and plans of the Service, as formulated and expressed by Rangers, Supervisors, and Regional Foresters. It requires almost clairvoyant-like vision to look into the remote future and determine the things necessary a year and a half hence, but as the years go by the outstanding needs and possibilities of Forest Service work become well defined and clearly established by repetition and coordination.

In course of time the Forest Service, in common with other Bureaus, submits to the Secretary its preliminary estimates of the needs for the still rather remote fiscal year. The Secretary determines the total amounts of the increases which he feels he can ask the Budget Bureau for and fits the Bureau estimates into this total figure as equitably as possible. Bureau chiefs are called in to discuss their estimates before final decisions are made. After perhaps several adjustments the amount that each Bureau of the Department is to present to the Bureau of the Budget is decided upon.

Now begins a feverish period of calculation, tabulation, and typewriting on white sheets, blue sheets, pink sheets, etc., upon which are shown in detail the appropriations for the preceding fiscal year and expenditures therefrom, the appropriations for the current fiscal year and probable expenditures, the proposed appropriations for the ensuing fiscal year and the extent to which they represent increases over current allotments. Then there follow what are known as "justification" sheets, upon which are set forth the facts and figures to support the requested increases. Bound into sets, numbered by pages, and marked by tabs, these constitute the foundation for the eventual official budget, a document of thousands of pages in which are set forth all of the intricate financial activities of the Federal Government.

However, this is not all by any means. The estimates must still stand the acid test of scrutiny and cross examination by the Bureau of the Budget. On designated days the Forester, accompanied by Henry Wold and Leslie Mahurin and certain of his Chiefs of Branch, seats himself at a long table around one end of which are grouped the Director of the Budget and certain of his principal assistants and advisers. Then begins the weary march, page after page and item after item, through the estimates; brief explanation by the Forester of the need for each increase and the results thereof if allowed, brisk and searching interrogations by members of the Budget Bureau, cross fires of comment and emphasis upon apparent discrepancies, frenzied searches through great piles of documents to find the data on some particular point, supplemental statements by the men in charge of the particular items, and many notations by the Budget Bureau members upon their copies of the estimates. It is afterward that the decisions of the Budget take form and the final budget imposing in size and complexity but as yet confidential emerges from the Government Printing Office.

Later the scene changes to the hearing room of the House Committee on Agriculture, where veteran members of Congress, long experienced in the matter of estimates, pass page by page over the budget. Again the Forester is seated at the conference table surrounded by a great mass of exhibits and with his assistants hovering in the background ready to supply any item of information demanded by any member of the Committee. Near him a succession of reporters sit with pens or pencils poised or rapidly flying to record his every word and make it a part of the permanent record of the hearings. Questions by members of the Committee fly fast and furious so that one wonders how the reporters ever manage to follow the hearing or discussions. A somewhat similar scene is enacted before the Senate Committee after the House of Representatives has passed the appropriation Act. Finally the demand for the last item of information is satisfied and the weary Forester gathers up his exhibits and returns to the office. The estimates for the new fiscal year are on the knees of the gods.

DUTHIE TRANSFERRED TO WASHINGTON

Mr. George A. Duthie has been appointed as Chief of the Division of Information, Branch of Public Relations, to succeed Mr. Ward Shepard, who left the Service last April. Mr. Duthie comes to Washington from the Black Hills National Forest where he has been Supervisor for the past twelve years.

Some very effective PR work was accomplished by Mr. Duthie on the Black Hills and we expect him to start new publicity balls rolling in the Washington office. He also has a good background of forestry, having served as Deputy Supervisor of the Pike, and Supervisor of the Medicine Bow and Harney Forests before going to the Black Hills.

YE EDITOR DISCOVERS

Continuous records of duff temperatures in the Northern Rocky Mountain region are showing some very interesting features which previously have been unsuspected. For example, the shade of a small fence post reduced the temperature of the surface ¾ of an inch of duff from 142° down to 117° during the time that the shadow was passing over the thermometer. In the shade of a plot where approximately half the timber had been removed, cutting one small branch from a green hemlock which partially shaded the instrument increased the maximum temperature of the duff by more than 10°. Light clouds and both haze and smoke in the air reduce duff temperature much more than they reduce the air temperature. As the heat of vaporization diminishes with lower temperature, any condition which causes rising temperatures in the forest fuels will hasten the drying process at a rate even greater than that of the temperature rise. Any shade that reduces the temperature of the water contained in the fuels decreases the evaporation of this moisture far more than indicated by the air temperatures and so reduces the degree of inflammability.

The results of these studies indicate also that often slight shade such as is furnished cut-over areas by partial cuttings increase the chances of seedling survival. This is particularly true as on many clear-cut areas surface temperatures rise to over 120° for as much as eight hours in one day. Such high temperatures for so long a duration are sufficient to kill the cambium at the ground line and so cause the death of the seedling.

- - - - - - - - -

A special planting machine was demonstrated on September 12 at Norwich, New York, before the New York Section of the Society of American Foresters. This machine, a new duplex drawn by tractor, has given very satisfactory results, planting at the rate of about 20,000 seedlings per day with a crew of four men. It will negotiate rough ground, rocks and low stumps, and brush of a considerable size. By the use of this machine some 100,000 trees have been planted this season, which are doing as well as carefully hand planted trees. This duplex machine succeeds the former simplex outfit drawn by one or two horses. Two men feed trees into the slits made in the ground, which is then made firm by means of rollers. The machine is the invention of Scott R. Walling, a farmer near Norwich, New York, who has had the close cooperation of the State Department of Lands and Forests of Albany.

- - - - - - - - -

For the past week or more, messengers in the Atlantic Building have been occupied in lugging from desk to desk large bale-like envelopes which upon examination prove to be newspaper clippings. These are illuminating in their indication of the extent to which newspapers now regard forestry as a live subject. It is only by such periodical bird's-eye views of the apparent importance of forestry to the newspapers that one gains an understanding of its widely ramified interest and appeal to the average newspaper reader. These clippings are also a fine illustration of the spirit of cooperation and inter-Regional comity manifest in Region 5, to which by far the greater proportion of the clippings relate. Only a highly skilled mathematician could compute the hundreds of tons of woodpulp consumed in giving publicity to the forestry material originating in California, and since this State is not a large producer of woodpulp its activity in creating a market for that product can not be regarded as anything more than a friendly gesture in the aid of other Regions where pulpwood is an important product of the National Forests.

- - - - - - - - -

The headquarters of the western forest insect work of the Bureau of Entomology is being shifted from Stanford University to the University of California. This shift has been made possible through the assignment of space to the Bureau of Entomology by the University in the new Giannini Building. The new quarters will provide more adequate laboratory and office space than was obtainable at Stanford, and will bring closer together the forest insect investigative work and the California Forest Experiment Station.

FORESTRY WORK WITH BOYS AND GIRLS

Woodbridge Metcalf, California Extension Forester, says that about half of the time and attention of the Extension Forester for the past year has been devoted to work with boys and girls, mostly with those in the 4-H clubs. As occasion offered, some work has been done with other junior organizations, as in the case of the annual tree-planting day by Boy Scouts of two counties and a tree-study hike for a summer camp of Camp Fire Girls from another county. It was possible to fit this work in with appointments with 4-H club summer camps.

The months of June and July were devoted to attendance at 4-G club encampments to conduct tree-study and forestry trips and assist in camp-fire and general recreational programs. A second camp-fire-lighting form of ceremony was written which emphasizes the need for care with fire in the forest and the relationship between forests and water. This and the program written in 1928 were used at many of the camps and seemed to serve their purpose very well. It is planned to write a form of ceremony during the coming spring that will take less time than either of the other ceremonies, and can therefore be fitted into the program of any evening in camp. - From Extension Service Review for September.

MINING FENCES ORDERED DOWN

Judge Sawtelle has just rendered a final decision in the case of Max Ritter Von Baumkirchner who had enclosed some 2,000 acres of forest land claiming that he had a right to do so by virture of a large number of mining locations made by him. The Forest Service took the matter into the Federal Court asking an injunction to require removal of all the fence except that around 160 acres which was actually needed by the defendant in his mining operations. This case is believed to be the first of its kind. The validity of the claims was not challenged by the government, our position being that even if they were valid large areas of forest land cannot be enclosed and that only such fencing as is actually necessary to mining operations (Regulation T-9B) can be maintained except under permit from the Forest Service. - R. 3 Bulletin.

OVERLOOKED

By Ralph W. Crawford, Umpqua

On an afternoon during the latter part of July, the telephone at the Big Camas Ranger Station rang and a sweet feminine voice asked to speak to District Ranger Charles Thurston of the Diamond Lake District. When informed by the telephone operator that Ranger Thurston was in the field and could not then be reached by telephone, the lady was greatly disappointed because she was unable to tell her troubles to the Ranger. When asked if she desired to leave a message, she stated that she was speaking over long distance from Chiloquin, and that her husband had left that morning on a fishing trip to Diamond Lake. In the hurry and mad rush of packing his camp equipment she had neglected to include coffee in his supplies. Her request was that Ranger Thurston would personally seek out her husband in the Diamond Lake camp ground and see that he purchased a pound of coffee, and add it to his supplies before he left Diamond Lake to fish trout streams in more remote parts of the District.

COMPETITION

The growth of the Allegheny is not confined to acreage, activities, and receipts. Its recreational possibilities are being more and more widely appreciated. Requests for all sorts of PR information have been received from Alabama, The Virginias, Tennessee, Kentucky, Massachusetts, New York, Colorado, Nebraska, Indiana and from all parts of Ohio and Pennsylvania. Much of this widespread interest is the direct result of radio broadcasts made by the Supervisor and of articles written by traveling representatives of Cleveland and Pittsburgh papers. Thus far no requests have been received from California, but sooner or later we expect to pass on information even to the Golden State. Anyway, we do have several summer home permittees who live in the Canal Zone. T. A. E. in Eastern District Digest.

LIGHT BURNING BY THE INDIANS (?)

By H. E. Haefner, Siskiyou

At last an old Indian has been found near Smith River, California, who tells the white man that the Indians never burned off the country as claimed by the exponents of the Light-Burning Theory (or Burning Theory, if you choose). The country was set afire by lightning or by the early white trapper or hunter. It is planned to revisit this rare and evidently honest old Indian and find out more about the manners and customs of his people with reference to the forest and the wild life found in it.

RANGE FEEDING OF CORN TO SHEEP

In feeding corn to sheep on the range to supplement poor forage conditions it is best, states Mr. Cleve Cavness of the Grand Canyon Sheep Company, to scatter the corn broadcast rather than to pile it in small piles. This prevents gulping of the corn by the sheep and permits the weaker ones to obtain more nearly their fair share whereas in piling the stronger ones crowd away the weaker ones. It also helps to keep the herder ahead of the band when coming in to the feeding ground so as to slow them up and permit all of them to reach the feeding place at about the same time. This also permits each individual to obtain approximately its fair share. One-fourth pound per head per day is ample. Thus 7½ pounds will feed a sheep for one month. At 3¢ per pound (which is considered maximum for range north of Williams, Arizona) the cost per head per month would be 22½¢.

NEW REASON FOR SCARCITY OF SNAKES

Ranger Nicholson reports another reason discovered for not burning the woods. In talking with a resident of his district, he was told that since the Government had been keeping fires out, the woods had gotton so rough and bushy that snakes couldn't get around after food. Consequently they had mostly left the country. Eastern District. Digest.

- - - - - - - -

Is the Encyclopaedia Britannica trying to be funny? In describing the life of a Former Chief Justice of the Supreme Court it says, "For the first thirty years of his chief-justiceship his life was a singularly happy one. He never had to remain in Washington more than three months." And on the cover of the volume to indicate its alphabetical limits they use the words, "Lord to Mumps."

PREPAREDNESS PAYS FIRST DIVIDEND

By M. H. Davis, Angeles

So as to make available a supply of water at a strategic point the City of Pasadena Water Department recently installed a 3,500 gallon water tank on city owned land in the lower Arroyo Seco Canyon in the Angeles Forest.

This tank is located within an area of high hazard, numerous cabins being located within a comparatively short distance and a large number of people visit this canyon.

On Friday night, September 12, one of these cabins caught fire. The blaze was discovered by Patrolman Verne Smith and the fire truck and tank truck were promptly dispatched from the Arroyo warehouse. Within a few minutes the 450 gallon tank truck was pumping on the job and the Ross portable pump was hooked on to the 3,500 gallon tank constructed by the city of Pasadena.

The Ross pumper put the water through 700 feet of 1-1/2 inch hose and was pumped steadily for 3-1/2 hours without any trouble. The tank truck made three trips, and 1,350 gallons of water were pumped with this unit.

As a result, the fire was confined to the building, some of the trees and brush being scorched. Cause of the fire is, as yet, undetermined.

This fire demonstrated what can be done with available water and dependable pumping equipment. All together, about 4,200 gallons of water was used. - From R-5 Bulletin.

FOREST SERVICE
U S
DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
Theodore Roosevelt

Vol. XIV No. 42 Washington, D. C. October 20, 1930.

EXCHANGING NOTES WITH THE CITY FIREFIGHTER

By Richard E. McArdle, Pacific Northwest For. Exp. Sta.

Chief Grenfell of the Portland Fire Department was a recent visitor at the Wind River Branch of the Pacific Northwest Forest Experiment Station. After looking over the fire studies in progress at the Branch, he was taken to the Hemlock Ranger Station in the Columbia Forest where the local force explained the detection and suppression system and exhibited the fire-fighting equipment. I suspect that Chief Grenfell obtained a good many valuable ideas suitable for use in his own work, and in the course of the visit it became apparent that our organization and his have much in common. Some of the observations made at that time are of general interest to members of the Service.

City firefighters are discarding the old soda-acid type of extinguisher in favor of back-pack pumps with water; the soda extinguishers are now considered scarcely more efficient than water, damage materials almost as much as fire, and when old are liable to explode. Until recently the only method used in fighting city fires has been to pour on water and more water. Attempts are now being made to avoid the use of water in certain instances. For example, carbon dioxide is being used in telephone exchange fires because water ruins the equipment almost as completely as fire. Most city fire trucks are not designed for long "runs" and steep grades--the radiators are too small--and, like much of our own equipment, manufacturers can improve their products. Threading on fire hose, hydrants, etc., is being standardized to enable interchange of equipment between cities. Portland has recently changed the threading on its equipment at considerable expense and can now utilize the equipment of near-by cities when there is a large fire. City firemen have trouble with the present type of hose coupling, for the lugs catch on door jambs. Since seeing the Service tool cache the equipment for combating brush fires in Portland will be kept in one place ready for use. The Chief intends also to get Hauck torches and hazel hoes for fighting brush fires.

Some time was spent looking over the new radio equipment, for at present it is impossible to communicate with the city fire boats after they leave the wharf. Some means are also needed to convey orders to men working on the roof of a building. Portable power pumps have been displayed at meetings of city fire chiefs but apparently have never been demonstrated. Portland contemplates the purchase of a small power pump for use on a launch so that water can be played on fires beneath wharves, where present equipment can not be used. The Service method of unrolling a section of hose downhill--rather than pulling several connected lengths uphill--was considered a valuable suggestion. Rooms in buildings sometimes get so filled with water that collapse of floors is imminent. Holes are bored in the floor to let the water out but hand boring is unsatisfactory; the new type of power borer developed for use in snag blasting could be used for this purpose.

The training of men is as big a problem in city fire fighting, as in forest fire fighting. Insufficient practice on actual fires is obtained and too frequently the men forget between fires what they learned (or should have learned) on the last fire. Because fire behavior is not understood, improvements in fire fighting have come about largely by accident and through improvements in equipment. A school is in operation this fall in an attempt to overcome this lack of training. Like the attitude toward our guard training camps, some of the old-timers think the school idea is rather silly. To keep the city firemen in good condition, handball tournaments were started--replacing daily calisthenics, which the men disliked. (Fortunately for us, we do not need to worry about artificial exercise for our firemen!

The city has smoker, brush burning, railroad, and the other types of fires encountered by the Service, but Portland has very few lightning fires. City fires are due chiefly to carelessness. In Europe, the attitude toward a man who has a fire is different from the attitude in this country. In France, the code of Napoleon, still in effect, prescribes that the owner of a building is responsible for fires on his property. He must explain the cause of the fire and why it was not prevented; he may even be sent to prison. In this country, the man who has a fire gets sympathy from his neighbors; in France, he is considered as having caused community expense and damage by his carelessness. This attitude is said to be thoroughly ingrained into the people. The result is that the yearly per capita fire losses in European cities average less than 50 cents, whereas in the United States they amount to about $5.

Chief Grenfell says that city fire departments have learned that it pays to send a large number of men to every fire on the mere chance that it may be a large one. In the long run money is saved.

STOP FOREST FIRES IDEA SPREADING FAST

By Roy E. Miller, Washington

The American people are beginning to take their forest fires seriously and demanding fire protection in many important wooded sections, published accounts and editorials indicate. Recent announcement by the U. S. Forest Service that last year's forest fire losses amounted to $102,000,000, that about 90 per cent of the damage was done in unprotected areas, and that the Southern States, the heaviest losers, had been able to hold the loss on protected lands to less than one per cent of the acreage, leads the Journal, (Atlanta) to say:

"Evidently, we can save our forest wealth if we will."

New York papers take a similar view.

"The future safety of the American Forests evidently lies in the extension of organized protection and the education of careless smokers and rubbish burners" says the New York Post, in reviewing the situation.

"The soundness of investing in such protection is evident" says the Worcester Telegram.

The Marinette, Wisconsin, Eagle-Star appeals for fire caution in this manner:

"We are inclined to get all heated up in time of war with patriotism, but a little more love of country in time of peace would help. Why not, fellow smokers, show our patriotism by helping to save the country's forests?

"Arkansas may not have money to burn, but she is burning it nevertheless" says the Fayetteville Democrat, in an article urging better protection. Arkansas suffered more from lightning fires this year than ever before.

The Little Rock Gazette adds:

"A large part of our natural woodland must continue to give us timber yields ranging down from half the full growing capacity to absolute zero, unless the forest fire problem is solved. Experience should have taught us by this time that it is too big and complex a problem to be solved by individuals or groups of individuals. Nothing less than organized state action can stop a waste that would eventually leave us forestless in the commercial and industrial sense."

Again in Florida:

"Forest fires in Florida every year destroy enough young growth to build, if it had matured, 100,000 six-room houses, each containing 16,000 board feet of timber says the Fort Lowderdale News, in appealing to sportsmen to be careful with fire.

After telling of the assessment of a $25 fine against a man who set forest fires, the Grand Rapids Herald (Mich.) says "such leniency is not in keeping with the seriousness of the offense."

Of approximately 1,000 clippings of editorial comment that came into the Washington office last month, only two were noted that were not entirely sympathetic in tone. One of these was based on a communication from a county where woodsburning was formerly prevalent.

THE BUFFALO AND THE BARRENS

By E. F. McCarthy, Central States For. Exp. Sta.

An early record made by Rev. James Smith (Tours into Kentucky and the Northwest: Journal of Rev. James Smith of Powhatan Co., Va., 1795) casts some light upon the relation of buffalo grazing to barrens. It would seem very likely that the grazing about the Blue Lick of Kentucky would be especially severe because of the herds attracted to these springs to get salt. The records of Mr. Smith show that the influence of the large numbers of buffalo tended to create an appearance of barrenness although he still mentions that trees existed in the vicinity of the springs even though trampled by buffalo.

From this account it would seem that the utmost effect of grazing was the creation of limited openings in a forested country. The more extensive barrens in Kentucky in the Mammoth Cave region were probably caused by dryness of the site rather than through the influence of animals. Mr. Smith recorded the following in his journals.

"Saturday 24th. (Oct. 1795) - - - - - - - We soon reached the Blue Licks, the country around which remains a monument of barrenness. The amazing resort of buffalo to the Licks in former times is supposed to be the cause of this barrenness. As you approach the Licks, at the distance of 4 or 5 miles from it, you begin to perceive the change. The earth seems to be worn away, the roots of the trees lie naked and bare, the rocks forsaken of the earth, that once covered them lie naked on the neighboring hills, and roads of amazing size, in all directions, unite at the Licks, as their common center. Here immense herds of buffalo used formerly to meet and with their fighting, scraping, et cetera, have worn away the ground to what it is at present. The Salt Spring at this place rises in a flat ground near the river Licking, and affords a great deal of water. The water is brackish with a touch of sulphur, and has a bluish appearance, which is the reason of its being called the Blue Licks. Here they make considerable quantities of salt. It is found that the saltiest water is procured by sinking wells a few feet deep and getting the water from thence. In sinking a well of this kind here some little time past, the bones and teeth of an animal of enormous size was found. Some of these bones and teeth I saw and handled. A tusk was the most remarkable. It was something in shape of a boar's tusk, was 4 or 5 feet long, and when first found weighed about 50 pounds. We left the Lick and pursued our journey to Lexington following one of the old buffalo roads, which I suppose was generally 200 feet wide. After we got from the Licks 5 or 6 miles, the lands became good and surprizingly fertile. We reached Col. Rogers' at Bryant Old Station where we lodged."

OUR WILDERNESS

By J. D. Reyes, Santa Barbara

With the deer season over for another year, we want to relate the good fortune of one party of up-to-date hunters.

On August 19 at 5:50 P.M. an airplane, License #NC405M, operated by R. E. Dickenson, with N. K. Lincoln as passenger, landed at Potrero Seco, near the forest guard camp. They had left Santa Paula at 5:30 P.M. and made the trip in 20 minutes - a distance of approximately 30 miles. Exactly 10 minutes after landing, Lincoln bagged a two-point buck near the guard station, - the one that the guard had been trying to catch asleep by the trail since the season opened.

Feeling well satisfied with their catch and with plenty of meat for both they called it a day, made camp, slept the night through in peaceful bliss and took off the next morning at 8 A.M. for home.

Hoping to get a corner on the deer market in this district after such quick work on the 19th on the part of his friend, Pilot Dickenson returned on the 25th, landing at 5:15 A.M., with his gang, - a party of four and all crack shots. This time Ranger Reyes happened to be on the field when they arrived and asked if they were looking for deer. Upon their anxious reply of "Yes," Ranger Reyes said, "I'm sorry but I just left them out of the corral." They hopped off that evening at 6:00 P.M. after scouring the surrounding hills, without any signs of a two-pointer hanging out of the cockpit, and somewhat disappointed.

Forgetting their ill luck on the 25th, Dickenson flew back again landing on the same field the morning of the 28th at about 6 A.M. with the same gang. This time their patience was rewarded. They killed a two-point buck by noon and took off at 2 P.M. with the quartet singing, "Happy Days Are Here Again."

We will probably see more of these boys when the deer season opens next year. We are wondering how the guard feels about it. - From R-5 Bulletin

FINANCIAL OPPORTUNITY

A young man from the Rapidan Country, where President Hoover has his summer camp, brought in a section of young birch, on which a branch had grown back into the stem, forming a bow about six feet long. Munns referred him to the Editor and we have now received the following letter:

"Dear Mr. Kylie: Your letter of the 22 at hand. Very sorry you can't buy the birch bow.

"Mr. Kylie would there be any chance of you getting the birch off at twenty-five dollars within the next few days if so would be glad if you could and if you can get more than 25 dollars you are welcome to it. I could have sold it in Shenandoah for twenty-five dollars and it seems to me that you could get rid of it there. Probably at the museum if you can please let me hear from you at once, and if you can't I will come down within the next two or three weeks and get it.

"I was told Mr. President Hoover wanted something like it so you could see him probably Mr. Hoover would buy it as it was named the Hoover Birch and put in the papers - believe it or not.

"So please let me hear from you whether you could handle it and thank you for taking care of it.

Very sincerely yours"

YE EDITOR DISCOVERS

A follow-up of last spring's desperate effort to combat the mountain pine beetle in the western white pine stands on the Coeur d'Alene and Clearwater Forests indicates that an excellent job was done on the relatively small Clearwater project and that most of the Coeur d'Alene camps did equally good work. Some additional work on the Coeur d'Alene is necessary in areas not covered last spring and on some patches of reinfestation. This work will be divided between the fall and next spring, with the less accessible areas handled this fall when transportation facilities are better. On spring jobs it is often as hard to fight the mud and snow drifts as it is to fight the bugs. The job got under way early in October.

- - - - - -

"It is most gratifying," Commissioner Lafount of the Federal Radio Commission recently commented, "to note the trend by many broadcasting stations from jazz to informative and instructive talks by officials and experts. This is one of the most important uses to which a station can dedicate itself. No one can estimate the benefit to the American people if selected educational programs are brought into their homes daily. Healthy discussions among members of a family naturally follow. In the end death blows will be dealt to provincialism and collcquialism which lead to sectionalism and strife. The government of Mexico is purchasing receiving sets and establishing listening stations in order to raise the cultural level through educational programs. Germany at the moment surpasses the world in educational broadcasts. Microphones there are taken into factories, shipyards, government assemblies, etc., in order that air students may hear the buzz of industry and actual debates as a background for the instruction of the radio teacher."

- - - - - -

Seventy two black walnut trees, of second-growth from 12 to 14 inches in diameter, were recently sold by a farmer in Barton County, Missouri. The purchaser, a St. Louis firm, paid for the lot the sum of $1,500. The trees averaged 2 - 16-foot cuts each with an average volume of 130 board feet per tree and brought $20.83 apiece, or $160 per thousand board feet in the log.

- - - - - -

A diploma of proficiency in scientific salesmanship has been issued by the National Salesman's Training Association to George E. Griffith of the Region 6 PR office. The association's course in salesmanship training was taken by Griffith in order to enable him to carry on his lecture tours, public contacts, and other phases of PR work more effectively.

- - - - - -

The Lake States Forest Experiment Station has just issued another publication through the Upper Peninsula Development Bureau of Michigan on "The Upper Peninsula Forest Experiment Station - What It is and What It Does." This experimental forest is 640 acres in area and was given to the Federal Government by the Cleveland Cliffs Iron Company in 1926. In the three years since it has been established a number of cuttings have been made in accordance with several different schemes of silviculture. The amount of board feet removed in the cuttings ranges from 23 per cent to as high as 100 per cent. Other studies on the forest include various methods of slash disposal, the effect of the forest upon climate and fire hazard and swamp drainage in order to increase the rate of growth on swamp land. The publication is obtainable from the station at St. Paul.

CLEVELAND BOASTS SCIENTIFIC LOOKOUT MAN

By C. M. Gwin, Cleveland

The Cleveland may possibly eliminate the necessity for cross readings and concentrate its detection service in one "super station" on top of the modern 75-foot tower on Santiago Peak, provided J. F. G. Cone can be induced to accept the position of "super lookout." This man confidently informed us at the spring guard meeting that merely giving the azimuth on a smoke didn't complete the job with him at all. He would give the location, and, if provided with a range finder, the area of the fire. The first attempt was the Agua Tibia Ranch fire, which he overshot about 11 miles and placed on the Nigger Nate grade. However, he reported to Corona soon afterwards, with considerable chagrin, that he had made an error in his calculations. Just to show that he could do it, recently he spotted the San Ysidro Mtn. fire (67 miles air line) within the section. and the Kitchen Creek fire (88 miles air line) within a mile. This is accomplished by a series of scientific deductions, and not through familiarity with the terrain. - From R-5 Bulletin

CORRECTION

The minimum desirable acreage under average conditions for a natural area should have been stated as 1,000 acres instead of 100 in the article entitled "National System of Experimental Forests and Ranges Inaugurated" in the Service Bulletin of September 29. An administratographical omission.

DAMAGE FROM THE DROUGHT OF 1925

Two upper slope areas in the Bent Creek forest were placed under observation in September, 1925, following the severe summer drought of that year. A number of trees were tagged and described at the time of the drought and subsequent observations of their vigor were made in 1927 and 1929. Soil conditions were observed at the height of the drought season and comparative observations made the following year. These soil observations indicated that moisture content was reduced during the drought considerably below the minimum for available water in the soil. Final observations on these areas have been made, and the results prepared for publication.

Of the tagged trees within the areas not a single tree that maintained normal foliage during the drought period showed any evidence of injury during the succeeding four years, that could be attributed to the drought. Of the trees showing definite drought injury at the time of tagging (September, 1925) about one-half of the number completely recovered. The remainder sustained injury in the form of dead branches in the crown, or were killed either by the drought or by secondary causes.

There were marked differences in response to drought conditions among the oaks. The leaves of chestnut oak were only moderately or slightly injured during the drought. Trees of this species were quite normal the following spring. No permanent injury could be attributed directly to the drought condition. Black oak showed severe leaf injury during the drought period and all of the trees of this species were dead by 1929. With few exceptions red oak and scarlet oak responded similarly to black oak. The hickory species present--mockernut, pignut, and shagbark--were only slightly injured during the drought period. In most cases recovery among the hickories was complete.

Extensive root excavations were impractical because of rock obstructions, but it seemed likely that root restriction due to rock outcrops or to shallow soil in rock pockets was the significant factor responsible for the drought injury. The soil throughout the areas under observation was shallow, frequently being less than 18 inches in depth. During normal seasons such soils support a heavy vegetation due to the ground water moving from above. In periods of drought, however, there is no movement of ground water and these thin soils dry out rapidly and injury to the vegetation is a natural result.

Meterological studies have established the fact that fluctuations from the normal have frequently occurred in the Southern Appalachians and indicate that drought periods are to be expected in the future. - From Appalachian For. Exp. Sta. Annual Report

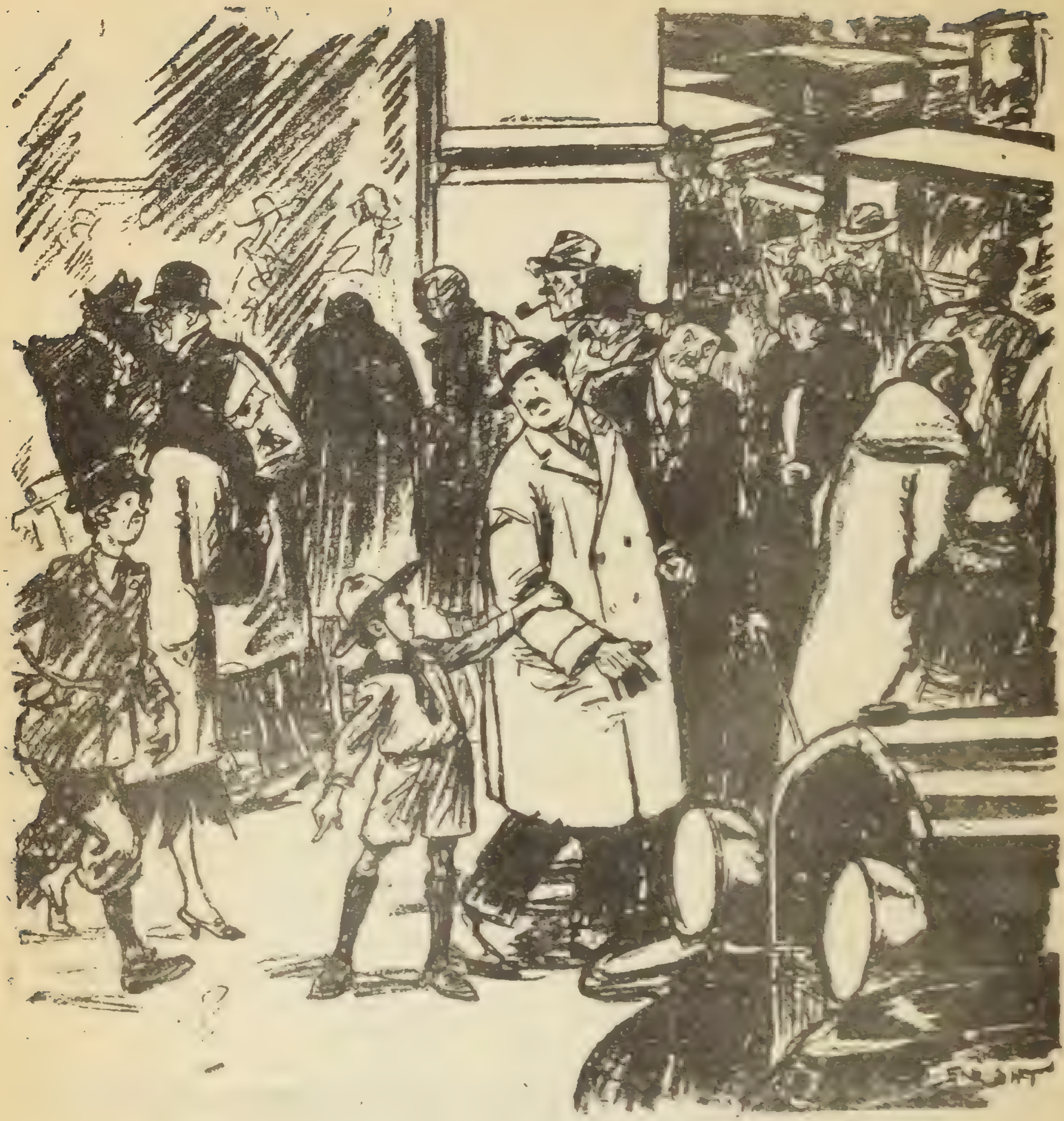
A STUDY IN LETTERS

While the biographies of the "old timers" are being held out in the Bulletin to the rising generation and the Shenandoah has had its warden idea "so rudely punctured," and while John D. Guthrie is trying to locate the antecedent of an "it," let us enter into a short study in letters.

The origin and history of the English alphabet (a union of the first two letters of the Greek alphabet) has an official interest that is well to recognize. Take the letter "K" to lead off with. In that alphabet it is known as "Kappa," spelled with a "K". College students have capitalized this letter in a number of fraternities. The letter is the first of the Greek word "Kai," which means "and" in our language. We all well know the significance of this conjunction, especially in dictation, for when the thought kinder wanders from the subject, one can dwell for a short spell on the word-until the stenographer catches up. Also, the sheets A to K are especially familiar. Just why the stop was made with "K" instead of going on to "L" or some other letter has never been satisfactorily explained. Then we have Form 19-K, which so far has withstood all land grant attacks. Schedule K in the tariff acts has displayed its skill in maintaining the price of wool. The letter "C" long ago gathered unto itself the sound of K when it means to be harsh. This is illustrated in such words as chirography, comptroller, cooperation, coordination, coalescent consistency and concatenated cogency, etc. And it went the rounds during the late war that the Germans spelled "Kultur" with a "K" because the English had control of the seas. - Albert Morris, Region 3

- - - - - -

Federal administration and protection of National Forests insures permanence, stability of management, and the highest use of the natural resources of the forests for the benefit not only of the State but of all the people of the Nation. - S. B. Show, in "How the National Forests of California Benefit the State."



"Say! That's the way you start forest fires!"

– From Spokesman – Review,
Spokane, Wash.

FOREST SERVICE U.S. DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XIV, No. 43 Washington, D. C. October 27, 1930

FROM CHAPS TO PUTTEES

By Willard L. Sears, Angeles

How vividly I recall the 22nd day of May, 1905, when a green forest guard, with two fat horses, a small roll of bedding, just $6 worth of grub in the brand new kyacks and an intense desire to get at the job, rode out of Sonora in company with Tom West for the Stanislaus Forest Reserve.

The salary under my first appointment was $60 per month, and I furnished everything as well as maintained it. I took the first rangers' examination ever held and if memory serves me right the practical question section was held in Sonora on July 24th and the field test at Crow Creek on July 26, 1905. Our first work that spring was burning dead logs, counting stock, and building the first four miles of Government owned telephone line on the Forest. We then crossed over the Sonora Pass into Mono County, where we first met J. C. Wells, Forest Ranger from the Tahoe, a little man who stood sizing us up with sharp eyes from under bushy brows and big fedora hat. He wore spotted sealskin chaps.

The first work we did on the east side was to blaze the north boundary and then we turned our attention to trespass sheep. Tramp sheepmen were grazing their flocks along the boundary lines and occasionally getting over, but we found them as slippery as the proverbial eel.

However, we did catch Thomas Deguirre at the extreme head of the Walker River where the soldiers of the Yosemite Park had crowded him over into the Reserve and he could not get out. We took him, as well as the two herders, to Stockton and turned them over to U. S. Commissioner Webster, who placed each under $500 bonds and then allowed them to return for the sheep. A test was made of the Deguirre case and the decision was rendered in favor of the Government, and that put a definite end to sheep trespassing.

The year of 1907 to me was a most interesting as well as a most profitable one. I was placed in charge of the new district that had been added in 1906 on the north, and it was my duty to educate the new people in our policies. This proved to be most interesting although not easy, because someone, through ignorance or malice, had spread false propaganda among the mountain people and they were opposed to the Forest Service. I had prepared for this task and will venture to say that I knew every regulation within the two gray covers of the little Use Book. This district comprised some 250,000 acres, and I visited every cow camp, - although in some instances I knew I was not welcome - rode every stock range, settled many range controversies, as well as reported on several homesteads.

In July, 1908, I took charge of the Calaveras District and that year I had my first big forest fire; it burned for fourteen days and covered fourteen thousand acres. With a small crew of men we put it under control every night only to see it raging again on the following day. One day I had fifty-two men on the payroll and I had no doubt but that I would at least be severely reprimanded and possibly relieved of my position for this seemingly rash act; but we put the fire out.

On December 1st, 1916, I was transferred to the Angeles. After coming from a Forest like the Stanislaus to the brush covered mountains of the Angeles, I was at first discouraged but soon became interested in the water problem, the watershed forests and their relation to each other, and was soon convinced that this Forest was just as important to the economic welfare of this State as any of the timbered ones in the Sierra Nevada.

Twenty-five years in the Forest Service seems but a short period of time, yet when we think back over each interesting year with its changes and its progress we begin to realize it's a life's work and a long, long trail after all.

CLOTHES AND JUDGMENT

(From E. W. K.'s article in Aug. 31, 1930, number of R. 1 Bulletin and
the Forester's reply in Sept. 20 number)

"Men are judged by the clothes they wear" -- a homely saying a century old or more, but nevertheless still replete of truth. Applying this venerable adage to our camp-ground development and maintenance, our sign-placement work, and fire-poster work, we often encounter standards of performance that undoubtedly give the judging public grounds for speculation. May we not find reasons also for similar speculations in the appearance of some of the men employed by the Service to contact the public in connection with our so-called permit procedure?

Admitting for purposes of illustration that the visiting people try to read our signs and posters and seek information therefrom, what likely is their reaction when they approach an old, weather-worn and rusted property notice on a Forest Service structure?

What likely is the public reaction when it encounters along our trails and roads, after all these years of its obsolescence, the ugly-appearing old yellow-colored tin fire notices, now some eight to ten years weather-beaten and faded? Pretty shoddy clothes, we all must admit.

Imagine what the public reaction may be when held up by a man on a main road leading to and from the Forest, waving a red flag, dressed in a badly soiled, once white shirt with red collar and otherwise decorated with brilliant-hued trappings and with a necktie of a shade so violent as would put out one's eye; other garments equally as badly soiled, if not so gaudy, and in all, except for his badge, bearing no more of the appearance of a Forest officer than a typical drug-store cowboy at a Fourth of July celebration.

The fine courtesy of the chap in his address to those he stopped undoubtedly did not entirely mitigate the reaction to that tawdry shirt and tie and general unkempt appearance Every man in the field who wears a Forest Service badge is a Ranger to the partially understanding public. Certainly our Ranger force does not enjoy being classed in the same style category as the show cowpuncher or the "hickory-shirted" bo.

Of course, none of the items mentioned, taken by themselves, have much direct bearing upon our major task of growing more trees or enabling us to make more and better camps. However, they must have a vital influence upon the respect won from the public, the growth of public confidence in us as capable managers, and its entire conception as to what the Service stands for, anyway. These evidences of our work are about all the public sees and understands

- - - - - - - - - - -

My attention has been called to your article, "Clothes and Judgement," in the August 31 Northern District News. You are right. I have thought many times of what we lose as an organization by the apparent failure of some of our personnel, excellent men and workers though they be, to realize in their appearance and contacts how they individually are frequently the yardstick by which the caliber and class of Forest Service personnel and work are measured. For example, on one occasion this summer my companion termed the appearance of one of our men "sloppy" and needlessly so.

We should stress this point upon all appropriate occasions because it is a factor not only in Service prestige and accomplishment, but in the service of the man himself. Personal appearance, in whatever garb, counts. The disparagement that comes from a lack of cleanliness and orderliness can hardly be measured but it is real, particularly in public service and in public contact. We should at least all start the day right in this respect regardless of what the day's grime and grind may bring to us.

I concur also in the belief that the opportunity exists for our field men to attain better results in public camp ground inspection, fire poster work, and public contacts within the time available to them if their interest is in seeing these impressive and conspicuous phases of our activities progress as they should.

THE RELATION OF BEAVER TO SOIL PROTECTION

By C. E. Rachford, Washington

"If you want to restore our mountain meadows bring back the beaver." So remarked Ranger Huff on the Whitman National Forest when we were discussing the cause of denudation of areas which had at one time been mountain meadows.

Casual observation might have led to the off-hand conclusion that overgrazing was the primary cause of destruction. There were the deeply eroded channels, the dead stock of willows, absence of other vegetative cover, and a pulverized top soil, — a typical case where the breaking up of the surface of the ground finally resulted in deep channels and consequent lowering of the water tables. But Huff was not satisfied with this explanation, and to show that his observations were more than casual an examination of channel banks and bed of stream was insisted upon. This examination proved rather conclusively that the meadows were beaver made. Evidences of old beaver work and dams were found from the hard gravel bed up through the banks of the channel. Attention was also called to the absence of recent beaver signs. This examination and the process of reasoning which Huff is so accustomed to follow led to the inevitable conclusion that the destruction of beaver, followed by the breaking of old dams and drainage which lowered the water table, was the primary cause of the condition of the area.

The remedy seemed to lie not in the total exclusion of livestock from the area, but in the restoration of the beaver. How to bring this about presented a difficult situation. The beaver food had been entirely destroyed; a State law permitted trapping, and if other beaver were introduced they would no doubt meet the same fate as the original colony. After considering various methods of improving the situation by the construction of brush and other dams it was suggested that possibly a pair of beaver might find sufficient food to enable them to start work, after which the raising of the water table would increase the food supply and gradually build up the area to original productiveness. Huff immediately answered: "I can show you a place where just that has happened."

We were then taken to a stream the upper portions of which were in exactly the same condition as the area previously examined, but where the beaver had escaped the trappers lower down and near a ranger station. These little water conservers had increased their work up the stream and were restoring conditions favorable to both plant and animal life. They were accomplishing in a most effective manner what would have taken the Forest Service years to accomplish by a more expensive and probably less effective means. The observations in these two instances emphasized the importance of looking at all sides of a question and applying a sensible remedy.

The question of how beaver were to be maintained on the area with an inadequately enforced State law on trapping was answered by the suggestion that the State Fish and Game Commission be requested to close the areas on which beaver were planted. If the State Game Commission should refuse to comply with our request the area might be closed by a Secretary's Regulation prohibiting trapping operations on National Forest land as a protective measure. It would seem that the Secretary's authority is sufficiently broad to cover such a situation.

These observations also make one wonder whether we really appreciate the full relationship of beaver to water conservation and soil protection. Some time ago I was traveling over a trail which had been made impassable by beaver. Several changes in location had been made, but with every change Mr. Beaver took a notion to build another dam. As a result Forest officers recommended to the State Fish and Game Commission that the beaver be trapped and transported to other localities. This was done, beaver ponds are no longer in evidence, but the area has been made less productive. The same thing happens in connection with the construction of roads where the engineers see no other way out than the destruction of the beaver, yet this subject of beaver control has been under investigation and study by the Biological Survey for years. Research has developed effective and inexpensive methods by which the water level in beaver ponds can be controlled. Had we applied these methods we could have such areas as those referred to producing a valuable fur supply as well as increasing the attractiveness or aesthetic value of the areas adjoining roads and trails.

WHITE PINE GROWN AT A PROFIT

In the '90's Mr. Pratt of Holderness, New Hampshire, was a lumberman, just like a lot of other lumbermen, cutting timber here and there, slashing, and moving on. About 1900 he began to think of growing timber instead of merely cutting it. He is not a technical forester but undoubtedly is a close observer and he knows white pine – the timber with which he has been working for some 40 years.

He told me that he started his first thinnings of white pine in 1901 on the 1800 acres of forest land which he now owns. He said he knew nothing about forestry at that time but reasoned that if he cut only the largest trees, the smaller ones would grow faster and that he could come back later for them. So he simply used his best judgment. A few years after he started he learned of the newly created Forest Service and found out that it sent out men to advise people on cutting their timber; so he wrote to Washington for a man to advise him. The man, according to Mr. Pratt, came with the intention of staying three days with him but at the end of the first day said to him "Why, Mr. Pratt, I can't tell you anything about growing white pine, you are already doing the right thing." and so Mr. Pratt had launched a successful forestry business.

Since that day, he has continued to practice forestry and to experiment and, while he did not say so, he undoubtedly has not overlooked reading the published literature on white pine and getting advice wherever and whenever he could.

At his little sawmill he showed us how pruning converted the butt log from knotty lumber worth $20 per M to $60 clear lumber, and he has found that his hardwoods mixed in with the pines yield a good profit when cut into apple barrel staves.

He showed us a stand of white pine about 40 years old which had been thinned some years ago. The trees were 8 to 12 inches in diameter, the forest floor was clean of underbrush and had a thick mat of needles and the crowns had closed. The trees had been pruned for 16 feet up and clear butt logs were forming. In 20 years more a cutting can be made. In contrast, he showed us a plot of the same age which had been left without thinning or pruning. The trees here were badly crowded, only about one-half the size and they will have to stay for a great many years before they will make even knotty lumber.

Mr. Pratt does not clear cut his pine stands. He practices what might be called a heavy selection cutting which takes out the large and badly formed trees and finally lets in enough light to secure an elegant stand of reproduction. He has an intensely interesting forest which is being handled in a wise fashion under a definite plan. I did not ask him to show me his plan. Possibly he has it in his head but at any rate he has very definite ideas as to what is to be done for a long time ahead, and best of all he says he is making money even at the present depressed lumber prices and he has no difficulty in marketing his crop. - J. C. K. in "Eastern Dist. Digest."

STUDY OF NAIL POINTS

A study intended to show the effect of shape of point on the holding power of nails makes possible several general conclusions. The nails tested include wire nails with the standard type of point in common use, types having more obtuse points of various shapes, and types having sharper and longer points.

In general the nails with the sharper and longer tapered points develop higher holding power than those having the common type of point, but they also show a greater tendency to cause splitting -- especially in the harder woods -- owing to the fact that they merely force aside the fibers with relatively little mutilation. Conversely the blunter points of various shapes, because they shear off and upset the fibers in driving, have less holding power and less tendency to split wood. The lack of holding power is due to the fact that such nails are in contact principally with fibers that have been broken and seriously displaced from the rest of the wood structure for some distance back from the nail.

With the mechanics of nail holding in mind, it was possible to design a nail that is an improvement over common-point nails in tendency to cause splitting of wood, and hence in holding power under many conditions of use. The improved nail has a tapered point extending over about a fifth of its length. The end of the point may be either flat or slightly rounded and of any convenient shape -- round, square, or otherwise. The characteristics of the nail can be varied by varying the diameter of the rounded or flat tip -- without varying the length of taper -- from approximately one-fourth the diameter of the shank for soft woods to about three-fourths the diameter of the shank for hard woods in which a larger area of fibers must be sheared in order to limit splitting. The blunt point of the nail just described, when used in a size adapted to the wood into which it is driven, produces sufficient shearing of fibers to obviate excessive splitting. The long taper aids in bringing the shank of the nail into intimate contact with the wood without further fiber mutilation or excessive wedging action. - From Forest Products Laboratory Progress Record for June, 1930.

YE EDITOR DISCOVERS

To Mr. Lynn Baumhofer of the Bureau of Entomology can be attributed the successful introduction of an insect parasite which preys upon the Nantucket tip moth. The plantations established at Halsey, Nebraska, hard hit in the past by this insect, have this year made good growth and leaders 12 to 18 inches long are common on trees which had failed to gain more than an inch or two in the past several years prior to the release of the new parasite. This work is probably the most outstanding case of successful parasitic introduction in the control of forest insect pests yet recorded in the United States.

However successful the drive against the tip moth has been, it has only served to make more food available for the pitch moth, which constitutes an even more serious menace to these planted stands. The larvae of this moth work on the base of the branches either girdling the tree or weakening it mechanically so that the stem breaks off, leaving a straggly, deformed individual which cannot hope to develop into a real tree. Scotch pine is especially susceptible to this pest, but all species are attacked. There has been an increase in its activity in western yellow pine in 1930.

- - - - - - - - -

As an emergency fire protection measure, Governors of two eastern States recently issued orders closing the forests of their States to the public. Governor Charles W. Tobey of New Hampshire has just closed all woodlands and postponed the season for hunting, trapping and fishing until further notice. On the evening of October 14 radio stations in New York broadcast an announcement that the continued drought has created an unusual fire hazard and that Governor Roosevelt by proclamation had closed the forests of New York. As the closing order becomes effective on October 15, which is the date of the deer hunting season, it will have the effect of deferring the hunting season in all public forests of the State.

- - - - - - - - -

Governor Dern of Utah has appointed a commission to study the origin and cause of floods and to ascertain whether or not flood prevention measures are advisable. This commission is composed of eight engineers, two geologists, two stockmen, a banker, a farmer, a botanist, a conservationist, the Associate Professor of Forestry at the Utah Agricultural College, and the Director of the Intermountain Forest and Range Experiment Station In appointing the commission, Governor Dern stated. "All phases of the problem should be subjected to the most careful scrutiny and scientific study. I trust you will recognize the importance of this work, which possibly involves a permanent State conservation policy." The commission has made a number of field trips over watersheds where some of the worst floods have originated and has held a number of meetings at which representative men have outlined their views of the problem. A report of the findings of the commission is scheduled for November.

- - - - - - - - -

Jacob Roeser, Jr., of Region 2 has been making some studies of seed production of the various Rocky Mountain conifers. The Douglas fir crop is a complete failure above an elevation of approximately 8,500 feet. The failure is laid directly to killing spring frosts, which accounts for the small number of flowers produced last spring. At lower elevations a heavy loss was also incurred because of the wet weather. The Englemann spruce cone crop is likewise quite deficient. For some reason the past season was an off year for spruce, as very few flowers developed. In the Pikes Peak region the western yellow pine seed crop was a complete failure. The year 1930 is the poorest seed year this region has experienced since the inception of phenological observations about 1910.

- - - - - - - - -

Rachford and Kneipp are wrestling desperately with the Public Domain reports and are almost unapproachable, partly because of the bulwark of large atlas folios with which they are surrounded and partly because of the dispositions developed through their efforts to reconcile some of the reports with the policies set forth in the Forester's letter of July 11. They are still wondering how it is that on the basis of a mimeographed set of instructions certain Forest officers will prepare detailed reports conforming both in letter and in spirit with the basic instructions, while others submit reports which appear to have been prepared on a totally different set of instructions. The last word is that the Public Domain Commission will meet November 10 with the idea of having their final recommendations in shape by the time Congress convenes the first Monday in December.

OUR BIG TREE DEPARTMENT

In the LIBRARY NOTES of September 11, and under the heading "Nothing Unusual About This," no less an unbiased authority than W. S. Gray is quoted as saying that California ranks first in the number of daily newspapers published, the highest in magazine reading and highest in the circulation of books - all per capita. This fact is not repeated here for the purpose of further aggravating some critics who have accused this Region of stuffing our publicity with horse feathers, but because it shows why, with so many intelligent people demanding so much reading matter, it is only natural to supply them with facts and figures about their remarkable home State, and, incidentally, the National Forests. - R. 5 Bulletin

SASSAFRAS IN KENTUCKY

A Mr. Driscoll living near Morehead, Kentucky, has two plants for extracting sassafras. He grinds up the roots and the lower part of the trunk of small sassafras trees and puts them through a cooking and steaming process in a wooden tank with pressure at 60 pounds, extracting the sassafras oil, which he sells to a New York wholesale drug company. The oil crystallizes at 42 degrees Farenheit and is shipped in barrels to the purchasing company. It brings $1.00 a pound in New York. The bark of the sassafras runs about 3¾ per cent in oil and the root about 9 per cent, and Mr. Driscoll secures about 20 pounds of oil from a ton of the material brought him. He pays 40¢ per cwt. for the roots and does the pulling of the stumps. The farmer makes about $8 a day in hauling these stumps to the plant, besides getting his land cleared free. He can afford to haul the roots about four miles, and Mr. Driscoll has found plenty of sassafras for his needs within a radius of four miles of each of his plants. - H.N.W.

- - - - - - -

"A tree is a thing of years and not simply of a few dollars paid in hand. It is a sort of evidence of substantiality - of seniority, if you please. To have an old tree is better than old silver or parchment, and to care for it intelligently marks you with the fitness of ownership." - Dallas News.

PACK FOREST EDUCATION BOARD ANNOUNCES FELLOWSHIPS

The Forest Education Board, founded by the Charles Lathrop Pack Forestry Trust, offers a number of fellowships in forestry for the year 1931-1932. The purpose of the fellowships is to encourage men who have shown unusual intellectual and personal qualities to obtain training that will best equip them for responsible work, either in the general practice of forestry, in the forest industries, in the teaching of forestry, in forest research, or in the development of public forest policy.

Six to eight fellowships are available. In making the awards, special emphasis will be placed on personal qualifications, ability to deal with men, ability to assume responsibility, and personal interest in forestry. No restrictions are made as to age, educational status, or practical experience. Ordinarily, however, the fellowships will be granted only to those who have finished an undergraduate college course or its equivalent. The amount of the fellowship grants will be determined by individual conditions. Generally speaking, the fellowships will range from $500 to $2,500.

Applications for fellowships must be made in writing, on the prescribed form, on or before January 15, 1931, to the Secretary of the Charles Lathrop Pack Forest Education Board, 1214 Sixteenth Street, N. W., Washington, D. C.

In the first award of fellowships by the Forest Education Board, in 1930, seven Americans and one Canadian were the winning candidates chosen from about 90 contestants.

TO CHANGE OFFICE QUARTERS

The Intermountain Forest and Range Experiment Station will occupy office quarters in the Hotel Biglow beginning November 1. Word has just been received of the approval of a lease by the Secretary of Agriculture. The Station now has 11 permanent people and there are three vacant positions to be filled within the fiscal year.

The Intermountain Forest and Range Experiment Station, successor to the Great Basin Experiment Station, has had temporary quarters in the Regional Office building in Ogden since 1908. It has now so far outgrown the available space in this building that it has become necessary to obtain quarters elsewhere pending the erection of adequate Federal housing facilities.. - From R-4 Bulletin.

EVALUATION OF NORWAY SPRUCE PULP WOOD

Evaluation and pulping tests on Norway spruces from a planted stand in northwestern Wisconsin show that this species is comparable with white spruce in all respects excepting yield per cord. The wood was investigated because of its extremely rapid growth rate and the resultant possibility of its reporduction for pulping purposes in connection with the planting program of a large Wisconsin pulp company. Tests were made on both dominant and suppressed types of trees. The weight per cubic foot (green volume) was found to be 21 pounds as compared with an average of 24 pounds or more for white spruce, but the pulping qualities of the Norway spruce were equal to those of Canadian white or black spruce. - From Forest Products Laboratory Program Record for June 1930

DROUGHT AND RADIO

What has caused the prolonged drought in this country? A West Virginia man thinks he has an explanation.

"I believe," he says, "that these atmospheric and climatic conditions have been brought about by the universal dissemination of electricity by the radio stations throughout the country."

He wants President Hoover to order that radio stations be closed for 60 days to test the theory.

We haven't any pet explanation ourselves, but we won't believe this West Virginia man is on the right track. He can't be right. We've been listening in on the radio pretty regularly, and we can testify that logically radio should work the other way. A lot of programs we've been hearing right along would make the heavens weep. (Bisbee Review). - From Region 6

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XIV, No. 44 November 3, 1930

A UNIFORM UNIFORM

By Gerald S. Horton, Chippewa

Shall we have a uniform in the Forest Service or shall we not! Personally, I believe we should. There is no doubt that a neat, serviceable, and even plain uniform gives the Forest Service an air of distinction which is bound to have an appreciably good effect upon the public at large, from our most humble free use permittee to our most reverend Senator.

Before going further I want to emphatically state that by a uniform I do not mean a full dress uniform such as Kaiser Wilhelm, the West Point graduate, or even the Sergeant of the guard at polo games at Fort Snelling wears. It is absurd to think of a forester "goose-stepping" through the woods in such a mess. He doesn't need to have on a coat, puttees, spurs, or even a hat. Let him wear high-topped boots, a stagshirt and even a cap if he thinks he is still boyish but for heaven's sake don't put on a polka dot blue tie with a uniform shirt.

The point I am driving at is this-if we are going to have a uniform let's have a uniform uniform. Wear a pair of breeches, shirt, stagshirt or coat, and tie that are uniform in color. Put your badge up where it belongs. If you must have some studding on your belt buy some chair casters and stick them on it.

The way we wear our uniforms now is disgusting. Regional Forester A comes around with a blue and white tie and a light cap. Assistant Regional Forester B comes around with a white shirt with blue stripes and a blazer that would excite the envy of any football coach. Supervisor C comes around looking fine except he must have his polka dot blue bow tie. Ranger D comes around with a pair of army breeches with the rest of his uniform. He explains that he has to wear out his uniform coat. These Forest officers are to be commended. The others just "come around."

I agree with Douglas Dendroctones about the suggested service stripes. We don't need them. However, we should have some plain insignia on our sleeve to indicate that we do belong to the Forest Service and not to some dry cleaners union. Perhaps the regular Forest Service shield leaving off "Department of Agriculture."

I gathered that old Douglas Dendroctones doesn't like our hats. Well that's too bad. If he wants to wear his coonskin cap and play Daniel Boone, let him do it. That would be an ideal manner of designating silviculturists!

Obviously we can't always have our uniforms on. When we paint the garage or grease the truck we ought to put on some old clothes. But, by and large, we can usually wear breeches and boots, shirt, and stagshirt or coat when attending to our official business. It won't do any harm if we overdress a few times. We have underdressed enough to make up for it. For example.

A man in a neat looking car drove up to the station as I was painting it last summer. "How do you do," says he.

"How do you do," says I.

"Could you tell me," says he, "where the man in charge here is."

"Why I'm in charge here," says I. He looked incredulous!

"No," says he, "I mean the Ranger. I want to see the Ranger who is Firewarden here." I explained that I was he, painting the house.

Old Douglas Dendroctones roared for a uniform "leavin' some leeway for individual choice." I beg of him to refer to Reg.A-1 on page 22 and 23 A of the Manual. We find on page 22-A the heading, "Specifications for Standard Forest Service Uniform." We see under Color that we must have forestry green. Fabric can vary from worsted to whipcord and from 13 to 20 ounces in weight. Not much choice under Coat. Breeches can be balloon or just breeches. You get more cloth in balloons for the same money. Trousers- well that's fine for those who do not like breeches. Can't kick there. Of course you have to have ivory suspender buttons but then you can wear those on the inside where they won't show. Buttons - vegetable ivory-something like silk-lisle socks or a Ford-Chevrolet car eh! Hat-quite a bit of individual choice in the style, I'd say. Guess a fellow can go bareheaded if he wants to. Puttees (leather) or spiral puttees, either one. Oh Boy! Shirt- can even wear a white one occasionally. And Neckties-either black or dark green. Don't go over to the Huron with a green one on, Mr. Forest Officer.

Now we come to the heading "For Optional Wear." This is the part old Doug. must have missed. Good Heavens, Doug., you can wear a vest cruiser coat, khaki cruiser shirt, high-topped shoes or riding boots, mackinaw coat, and, last but not least, a cap. Please Doug. look at these specifications for that cap-style-ENGLISH OFFICER'S FATIGUE CAP, or GOLF CAP, SCANT FULLNESS, FLEXIBLE LEATHER VISOR. Ye Gods and Little Tamarack Trees, Doug., what more do you want! Isn't that enough for any silviculturist?

MORE ABOUT THE UNIFORM

Hat's! Mine's off to Douglas Dendroctones - whoever he is, - for his vernacularly-written, masterful treatise of the uniform question in the September 22 issue of the Service Bulletin. Here in California's farthest north we got a big kick out of it and agree with him 100 per cent, - except on "hats." Like D.D., we want no service stripes, no rank insignia, and have no complaint to make on the Fechheimer robes which we now wear.

Change us from the neck down as you will, but woodsman spare that hat. The old John B. Stetson - or its cheaper substitute which most of us wear, - is close to our hearts after braving the storms of a quarter of a century. True, it may catch a little more breeze as we work our flivvers over the mountain trails, but all we have to do nowadays, anyway, when the breezes blow too strong is to reach over and roll up the window. We don't carry umbrellas here, and in rain and snow the old sombrero's the thing. Also we can in our imagination feel the hot coals from a burning snag falling down our necks unprotected by the eavesless. Daniel Boone pioneer cap which our "silviculturist" brother suggests.

Rally around, D.D.! Use your imagination and try to picture Ranger Bill going abroad in a golf cap, squinting his eyes in a painful effort to discover those trespassing cattle, or if on the streets or in his flivver wearing that painful look which naturally comes to one of the human kind when conscious of a feeling of nakedness. - B.B. - Modoo

DISEASES OF WILD ANIMALS

By C. E. Rachford, Washington

For the past many years observations on the condition of our wild life have led to the conclusion that disease is far more prevalent than is generally believed. From time to time we have had examinations of certain game animals made, and developments have proved conclusively that disease of one form or another is largely responsible for the low increase or the gradual depletion of the herds. In order properly to correlate the information so far available and to develop an approach to a study of the diseases of wild animals, a committee consisting of representatives of the Bureau of Animal Industry, Biological Survey, National Park Service, and the Forest Service has been appointed. This committee held its first meeting on October 10, and preliminary discussion of the whole situation brought out some important phases.

Dr. Hall of the Bureau of Animal Industry, Chairman of the committee, indicated his belief that the increase in parasites in wild animals corresponds to the increase in parasites in domestic animals, as the animals are concentrating on smaller and smaller areas. Recent studies in connection with the diseases of elk, especially Dermacentor albipictus or ticks, were rather fully covered. The discussion on scabies among Rocky Mountain sheep and elk developed the fact that results of investigations have been inadequate to determine whether the disease is communicable from mountain sheep to domestic sheep or vice versa. It opens up a great field for future investigation and study.

Dr. Hall further indicated that in one of the investigations on a National Forest, deer showed a surprisingly large percentage of cases of cysticercosis of the liver caused by bladderworms in an early larval stage of one of the dog tapeworms, Taenia hydatigena (T. marginata). This bladderworm is commonly called Cysticercus tenuicollis, and occurs as a fully formed bladderworm in the mesenteries. In an investigation by Dr. W. T. Huffman of the Field Inspection Division and Dr. Hall of the Zoological Division of the Bureau of Animal Industry it was assumed that the coyote was the important carrier of the adult tapeworm responsible for this cysticercosis in deer. Post-mortem examination of three coyotes killed in the forest showed one to be a carrier. These were all young coyotes and it is probable that a much larger percentage of adult coyotes harbors the worms. Control here is, for the present, a matter of keeping down the coyote population by killing. These deer also harbor a larval tapeworm in the heart, and this tapeworm develops to an adult in various wild carnivores. Control here is also a matter of keeping down these wild carnivores.

In the past two years numerous cases of lungworms in Rocky Mountain sheep, deer, and other wild ruminants, associated at times with the deaths of these animals, have come to the attention of the Bureau of Animal Industry. In most of these cases, though not in all, Dr. Gerard Dikmans of the Zoological Division has found the worms to be a very fine red worm known as Muellerius capillaris.

A new species of lungworm, closely related to M. capillaris, was present in Rocky Mountain sheep dying in Colorado. The cases were brought to the attention of Dr. Hall by Dr. L. L. Glynn and Mr. Poley of Colorado Springs and by Dr. George Stiles of the Pathological Division of the Bureau of Animal Industry, stationed at Denver. After an investigation by Dr. Hall certain facts which came to light seemed to point to an interesting and somewhat plausible hypothesis. The sick sheep had a cough, presumably associated with the lungworms, but in addition they were barely able to walk away from an observer and walked as if weak in the hindquarters. Furthermore, evidence has been found that these sheep had been eating the bones of old carcasses. This naturally brought to mind the work of Sir Arnold Theiler in South Africa in showing that lameness in cattle was associated with a toxic condition from toxins produced by anerobic bacteria in old bones, and that cattle ate these bones because they were suffering from the effects of a mineral deficiency in their diet, a thing which commonly causes pica, i.e., the eating of such foreign material as bones, stones, rags, and the like. Somewhat similar conditions have been found on National Forest ranges where domestic livestock were obtaining an inadequate amount of mineral salts.

In the rearing of quail for stocking, there has been much trouble from coccidiosis. Mr. Herbert Stoddard of the Biological Survey and Dr. E. B. Cram of the Bureau of Animal Industry have conducted investigations on this problem. Other investigations are under way in different parts of the country.

One of the most interesting discoveries reported at the meeting was the tapeworm infestation in trout on the Yellowstone Lake. Parasitologists ascertained that a certain larval tapeworm occurring in the viscera and flesh of the cut-throat trout, *Salmo lewisi*, would develop to an adult tapeworm, *Dibothrium cordiceps*, in the intestine of the white pelican when infested trout were eaten by the pelican. Trout in turn became infested indirectly from the tapeworm eggs in pelican droppings which are deposited in water. This parasite appears to be present in Wyoming, Montana, Idaho, and Oregon, and probably is present in other States.

We have also had investigations made which revealed the presence of *Hemorrhagic septicemia* in deer and antelope and strongly indicated its presence in other game animals. Game reports from different Forest officers are replete with observations of many suggested maladies among our wild animals, all of which points to the clear necessity of a study of the whole situation and the development of practical means of control. It is also clear that all animals captured for restocking purposes should be carefully inspected by competent authorities before the animals are transplanted.

The committee proposes to attack the problem by first making a preliminary survey to obtain information on the results of all investigations which have heretofore been made and then developing a program of research. In a short time Forest Service field officers will be requested to submit information which will be presented to the Committee on Diseases of Wild Animals at its next meeting in December.

NOW AND THEN ON THE WICHITA

By Charles Allen, Wichita

He'd been a Texas Ranger, in the Spanish American War and World War. Worn and weather-beaten but still active. Wide brimmed hat pulled down over thin, tanned face. Leather jacket, drab overalls, and six-shooter strapped to belt. His present trick was Game Ranger for the State Game & Fish Department. Should an unarmed fisherman stump him? The evidence seemed to indicate that the second party talked himself out of it.

The man reported to have done so, when accosted by the Game Ranger, just went ahead with his fishing and with eyes on the tantalizing cork seemed inclined to argue the case.

It all came to pass on September 29, while a large, conspicuous sign indicated that the lake was closed to fishing September 15. Even so, he with fishy appetite and ready tongue was reported as having insisted that the sign according to some other Game Ranger, was outlawed by a new Regulation.

Wherefore, party of the first part had come to Headquarters to report. Ranger Drummond and he went back to the lake and found the man, but he was not fishing and steadfastly declared he'd not been.

* * *

"The greatest assistance to agriculture that can come from Federal and State aid is the gradual development of a system of grower-owned-and-controlled cooperative marketing."

CONSERVATION EDUCATION IN PENNSYLVANIA

By George A. Duthie, Washington

A strong effort to have the teaching of conservation introduced into the curricula of all the public schools in the State of Pennsylvania was the motive of a Conservation Congress held at Pennsylvania State College on October 10 and 11. This was a meeting of representatives of the various organizations of the State who are interested in conservation. It was called by the Conservation Council of Pennsylvania for the purpose of securing from these organizations their endorsement of a comprehensive plan of conservation education. The plan proposes the appointment of a director of conservation and nature education in the Department of Public Instruction, who would be charged with the development and promotion of this branch of education in the public schools of the Commonwealth. The plan also proposes that the teaching of conservation education shall be included by law in the curricula of all public schools from primary grades through the high schools. It would further provide for the publication of nature leaflets and pamphlets as a help to the teachers in the schools of the State.

It is quite essential to permanent progress that the public shall become conservation minded. It is not enough that the public shall agree that conservation of our natural resources is a good thing. It must also be willing to subject itself to the restriction in the use of those resources that conservation imposes. This is something that the present generation finds hard to do. For example, it is hard for those who freely gathered wild flowers and other forest products when they were young to adjust themselves to the idea that they should refrain from gathering rhododendrons or from digging trees for transplanting purposes in the woodlands of others. The old idea that the woods are commons and the public lands are no-man's-land is deeply rooted in American subconsciousness. It is hard for the American public that has known the free enjoyment of nature's gifts to impose upon itself restrictions in the use of these resources because provision must be made for future generations. Not until a new generation has arisen which accepts the restrictions of conservative use shall conservation have the support we hope for.

Training the next generation to be conservation minded must begin in the early years of childhood and continue throughout life if the individual is to acquire a conception of the true relationship of our natural resources to our economic and social welfare. Nature study and elementary science in the lower grades, as well as a study of the natural sciences in the advanced courses, are as essential to a liberal education which will fit the individual to take his place in the community as is a study of art and literature. They should, therefore, have equal emphasis in the modern school curricula. In the education of the individual starting with the kindergarten, through all the grades, to the University course, there is a place for study of the wise use and preservation of those resources which play so large a part in our physical well-being.

There are few localities where conservation has been made a part of the regular course of study. Such instances have usually come about through the interest in the subject of some individual teacher or school superintendent and not as a result of recognition by commissioners of public instruction. If the State of Pennsylvania carries out the plan proposed by the Conservation Congress a big step forward will be made in the cause of conservation generally, for it will be assuming a position of leadership in pointing the way for other Commonwealths to follow.

At the Conservation Congress this education plan received the endorsement of representatives from the Pennsylvania Department of Public Instruction; two State teachers' colleges; the State Grange; State Federation of Pennsylvania Women; the Izaak Walton League; the United Sportsmen of Pennsylvania; and prominent educators from various schools of the State, and also from the Secretary of the United States Department of Labor.

CUTTING THE CHRISTMAS TREES ON NATIONAL FOREST LAND

Last year the Office of Forest Management requested the cooperation of the California Experiment Station in working out some definite cutting rules and regulations for the cutting of Christmas trees. Brundage was detailed to the job and spent about one week with Forest officers in a red fir (Abies magnifica) area on the Eldorado National Forest where Christmas tree orders from several wholesale purchasers were being filled.

The Eldorado officers were making a general thinning of the understory with a view to improving growth conditions in the nucleus of the future high forest. The most thrifty saplings were designated for leaving and all of the others which would make merchantable Christmas trees were cut. The system fulfills the requirement of being very efficient from an administrative standpoint and effected a very good release of the designated reserves in the areas observed. It appears impracticable from a cost standpoint to remove individuals which are unmerchantable (from the Christmas tree standpoint) simply to secure a further opening up of the stand.-From R-5 Investigative Report

YE EDITOR DISCOVERS

A. B. Hastings, in charge of the Division of State Cooperation, tells of an interesting planting he discovered on a recent inspection trip into eastern Colorado. One of the sons of a family living on a large wheat ranch near Genoa has been assigned a part of the ranch and on this he intends to build a place of his own. As a first step he has fenced an area approximately ten acres in extent adjacent to a good highway within which the buildings will be located. This piece was industriously summer fallowed and in 1928 was planted to yellow pine transplants set in rows ten feet apart perpendicular to the road with ten foot spacing within the rows. Through the center of the piece a roadway was laid out and on either side of this road a row of blue spruce transplants was similarly planted in 1930. Practically all these trees were found to be thriving in the summer of 1930. the whole area having been thoroughly cultivated each year.

It is the purpose of the owner to take out whatever trees are necessary to make room for his buildings, when he decides to erect them, and it is his hope that these buildings will then be set off by an excellent shelter belt of trees. This home promises to be of much interest in the neighborhood where trees are few and far between. The trees were secured from State Forester Morrill and were distributed under Section 4 of the Clarke-McNary Cooperative Project.

- - - - - - -

The Appalachian Forest Experiment Station has established a series of methods of cutting sample plots on the holdings of the Camp Manufacturing Company at Franklin, Virginia. These sample plots, of which there are five, contain 2½ acres each. The Camp Manufacturing Company is operating on a selection basis and has established a 12 inch diameter limit. The company is chiefly interested in the loblolly pine and not in the hardwoods, which for the most part are considered worthless. In cutting the areas selectively the company is therefore faced with the change in composition of the stand from loblolly pine to hardwoods. The Station's investigations were to determine the feasibility of eliminating most of the hardwoods, what could be done to encourage pine reproduction, and what rate of growth could be expected on reserved trees. On one plot the hardwoods were cut, on another the trees were girdled by taking out a chip completely around the tree. On a third the hardwoods were girdled merely by hacking through into the sapwood completely around the stem and by [illegible] in an arsenic solution. Sprouting apparently has been materially reduced by reason of the poisoning. There is still some question as to whether the poisoning was necessary, as the girdling alone appeared effective. On the cut-over land yellow poplar sprouts six to eight feet high in a single year were noted with red gum a close second. In spite of the very heavy drought, loblolly pine has come in remarkably well, in that trees in competition with other vegetation are from four to ten inches in height.

- - - - - - -

Minnesotans, the St. Paul Dispatch tells us, have designated clearing land by fire, careless smoking in the woods, railroad fires, and meadow burnings as the "four horsemen of the forest." Sword, famine, and pestilence added to fire could not leave a country much more desolate than a forest fire, as thousands of dwellers in the Lake States forest regions can testify from their own experience. The Minnesota Division of Forestry asks for cooperation from private citizens, whose indiscretions are blamed for much of the destruction. A fair proposition!

- - - - - - -

Mr. T. H. Scheffer of the Biological Survey accompanied Forest Service men on an inspection tour of the Hebo planting area on the Siuslaw Forest. In the eighteen year old plantation two permanent plots show that over 5 per cent of the trees was damaged by mountain beaver. A number of openings in this plantation area quite probably are due to the work of these beaver. It should be pointed out, however, that the mountain beaver is not a true beaver.

- - - - - - -

In memory of the late Stephen T. Mather, first Director of the National Park Service, an oak tree was planted at the old Mather Homestead at Darien, Connecticut, on October 19. Planting of trees in honor of Mr. Mather has been carried on throughout the country, singly and in groves, in widely separated portions of the country. One memorial forest of 10,000 trees was planted by the State of New York. In each of the National Parks a single memorial tree was planted on July 4, Mr. Mather's birthday, by uniformed Park Rangers. Plans are also under way for plantings in the Southern States when weather conditions are most favorable. The idea originated with Mrs. Charles Cyrus Marshall, President and Founder of the National Life Conservation Society.

- - - - - - -

The fire season can be considered as definitely ended in all Regions except in the southern part of Region 5, on two Forests in Region 6, and Region 7. The Region 9 report for October 10 stated that the season had not yet ended, but since that time the weather reports indicate that general rains have fallen.

- - - - - - -

John W. Spencer, in charge of Lands and Public Relations R-2, is in Washington on detail to assist in an analysis and summarization of the reports from the Regions on public lands, to be presented to the Committee on Conservation and Administration of the Public Domain.

AN EARLY-DAY SILVICULTURIST

Over 125 years ago, Dr. Dwight, President of Yale, visited western New York. At that time his attention was called to the lack of forests on land where forests had once grown. This caused much local speculation among the natives. The good professor who was an exceptional observer wrote as follows:

"When the forests are cut down, they either do not at all spring again or they spring very thinly, or insufficiently. This misfortune has been supposed to arise from the peculiar nature of the trees, or the peculiar nature of the soil. I strongly suspect that it is owing to neither. Maple, beech, and bass, may not indeed, as readily germinate from the roots after the trees have been cut down as oak, chestnut, and hickory. Whether this be true or not I am unable to determine. But that they will not spring in sufficient quantities and vigor from the seeds, I cannot believe. That the soil is favorable both to the germination and flourishing growth of the trees is unanswerably evident from the multitude, and the size of those which are now on the ground. Besides I have seen in a variety of places some of them in this very tract, a vigorous growth of these kinds of timber in spots where the full grown trees have been lately cut down.

"Grass grows in this region easily and vigorously, and wherever it grows, will extensively prevent the germination and check the growth of trees of almost every kind. Were these inhabitants instead of cutting down their forests in the manner which is called clean cutting, to thin them only, and thus leave the ground so much shaded as would be sufficient to prevent the vegetation of grass, they would I am satisfied find the seeds of future trees springing in abundance. Should they also exclude cattle from their forests so as to prevent them from cropping the young stems, they would find probably this evil done away."

Apparently Dr. Dwight could qualify as a silviculturist!- E. N. M.

EFFICIENCY IN "REFERRING" LETTERS FOR THE PUBLIC

An enthusiastic citizen of the State of Washington addresses a letter (in duplicate), August 12 to the Secretary of Agriculture with suggestions about the control of pests and about forest conservation in general, - and thence it is passed around as shown by sundry stamps and "respectfully referred" endorsements.

August 19, the Secretary's office had it.

August 19 at 2:30 p.m., the Plant Quarantine Administration had it.

August 27, Bureau of Entomology in Washington answered one part of it.

August 28, the Office of Silvics, Forest Service had it.

August 29, Public Relations had it for a day.

September 2, the Regional Forester of Six got it, but only to pass it on.

September 17, the Office of Forest Entomology in Portland received it.

September 18, it came to the Pacific Northwest Forest Experiment Station. And not knowing to whom to pass it on, the last agency must perforce write the citizen a sympathetic and erudite letter. - T. T. Munger, Pacific N. W. For. Exp. Sta.

FIRE AND THE BUFFALO

Alexander Henry wrote in his journal on November 25, 1803, of the effect of a prairie fire he saw in the Hair Hills at the source of Salt River.

"Plains burned in every direction and blind buffalo seen every moment wandering about. The poor beasts have all their hair singed off; even the skin in many places is shriveled up and terribly burned, and their eyes are swollen and closed fast . . . . In one spot we found a whole herd lying dead .... The fire ranged all night toward the southwest."

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XIV, No. 45 Washington, D. C. November 10, 1930

AN UNUSUAL PROFESSIONAL OPPORTUNITY

By R. Y. Stuart

The announcement of Fellowships in Forestry by the Charles Lathrop Pack Forest Education Board should arrest the attention of all foresters. Rarely is such an opportunity afforded members of a profession to obtain needed assistance in acquiring special knowledge, through intensive study, in some phase of their profession. Usually the privileges afforded by fellwships are extended to young men and for the pursuit of academic or research subjects. In this case there is no age qualification nor is the field of study within the forestry field restricted. Necessary qualifications are, of course, set up by the Board to assure competency in effort and a meritorious project.

Members of the Forest Service are most fortunate in having the stimulus to higher attainment afforded by these Fellowships and the liberal plane on which they are administered by the Board. Few men in other professions are given such an unusual opportunity.

WHY BORROW TROUBLE?

By R. D. Forbes, Allegheny For. Exp. Sta.

The news release by the Inter-American Conference on Agriculture, Forestry, and Animal Industry, entitled "Foresters Advocate Testing of Tropical American Woods", should provoke some sober thought among those of us who are working in hardwood regions. Although on careful reading the release is reassuring, in that it does not advocate - except perhaps by implication - direct participation of the Forest Service in a study of the quality of South American and other tropical woods, one can not help wondering how far it is likely to commit us to a cooperation with foreign nations which may defeat the main purpose for which the Federal Forest Service exists. Surely that is to promote the cause of forestry within our own borders.

The problems of hardwood forestry are probably more complex and difficult than those of most softwood regions. At any rate they are at least as far from being satisfactorily solved. If to existing uncertainty as to how to produce good crops of hardwoods we deliberately add the threat of possible competition from foreign woods, we certainly are not encouraging owners of hardwood land to practice forestry. My own forest school is today contributing the time of one man to research in tropical woods, and I have felt the possible result of his work important enough to register my personal protest against activities which may undermine American forestry.

I surely hope that the Forest Service will not embark on a similar project, unless the work is strictly confined to investigations in our own tropical possessions. To me the only possible excuse for tropical investigations is that they may establish the unsuitability of the great majority of tropical woods as substitutes for our more northerly products. Should the investigations prove that few tropical species occur in heavy enough stands to be logged at a reasonable cost, and to be suited technically for American needs, we would of course have an argument in favor of decent treatment of the American forests. Our harassed forest industries, chronically over-produced, facing the competition of numberless substitutes for wood, and mindful of the present plight of New England forestry, might take heart and show a real interest in timber growing if the bugaboo of the "vast forests of the tropics" were thus exorcised.

EVENT OF THE HOUR IN CONSERVATION

A constructive conservation platform, embracing suggestion for procedure in handling fundamental problems as a guide to legislative and public activities was adopted at the conclusion of the two-day Upper Peninsula Conservation Conference held at Marquette, Michigan, October 9 and 10 and attended by upward of 20 persons representing Michigan, Wisconsin, and Minnesota. The platform was drawn in the form of a resolution, the most important phases of which are as follows:

Agricultural Policies

"In agriculture we feel that most immediate and concrete need is for zoning the land for agricultural settlement. One of the big problems of agriculture is taxation. High taxes are one of the great obstacles of agricultural development. Any measure that may lighten the tax load upon agriculture will help its development. Roads and schools are the two largest items in the local budget. Both of them are very important. We feel that our farmers are entitled to the best schools, roads, and other conveniences.

"We advocate centralizing settlement in already developed, agricultural communities where these conveniences are already established and can be further developed at the least expenditure. What this means is zoning of land settlement, using the information made available by the land economic survey.

"Zoning, whether it can be accomplished by State law or otherwise, will designate certain lands for agricultural settlement, and other lands for forests, recreation, or other uses for which there is no great need for the construction of roads and schools and other local expenditures. Such a procedure, by reducing the need for local public expenditures, reduces the burden of taxation on taxpayers, whether settler, land owner, or small business man."

Forest Taxation

"The abandonment of large areas of cut-over land by the owner for nonpayment of taxes causes this land to revert to the State. We are witnessing a new economic fact - the birth of a new public domain. At present this new public domain is practically no-man's-land. Whether we want it or not, the cut-over lands are reverting into public ownership and the public cannot escape the responsibility for it Instead of the present inadequate policies toward this new public domain, we advocate a correlated plan by the Nation, State, county and township for the proper utilization of these lands."

Fire Control

"We express our appreciation of the fact that forest fire control has improved very rapidly during recent years and that the present season has tested the State and Federal fire organizations to their limits. We congratulate both organizations on the splendid showing which they have made, but feel that still further development will be necessary before our forest resources, including scenic values, and wild life, will be reasonably secure against the hazards of fire. Further fire fighting equipment, such as trucks, tractors and pumpers, increased numbers of trained and experienced staff men, and other improvements such as fire lines, are essential, and we pledge our support in helping to get the funds necessary for such continued betterment of fire-control agencies."

Recreational Development

"The increasing importance of the recreational industries makes it expedient that we check over our present system and determine whether more effective inter-relation cannot be secured between our State and National Forests, Parks, game refuges and hunting grounds, and wild life sanctuaries, and so as to develop a harmonious and interlocking system of such units, with the fullest utilization of all the resources of both lands and waters, and with recreational resources given fully adequate attention.

"In particular, we suggest that on our public lands planting may be done to improve game conditions as well as to produce saw logs and for scenic purposes as well as for pulp supplies; that choice fishing waters may be acquired in connection with the larger land acquisitions, and that both lands and waters be so developed and administered as to make wild life available for the recreationist as well as for the hunter and fisher."

Game Refuges, Hunting Grounds

"We endorse the resolution of the Upper Pennisula Development Bureau of June 12 and again urge the development of numbers of State game refuges, each to be provided with generous public hunting grounds, and that such developments shall be provided so far as possible in and for the areas where the State and Federal Government is already the dominant land owner.

Wild Life Sanctuaries

"We recognize that the public interest and concern for wild life is growing, and that an increasing number of our citizens are little concerned with hunting, fishing, and trapping, but are nevertheless joint owners of our wild life resources and entitled to a voice in connection with the management of our wild life affairs.

"Since hunters and trappers are now financing for themselves game refuges and public hunting ground development, we urge that some method be found for making this point of view effective, and suggest the possibility of some regular and official form for making donations, or for collecting small fees, in order to privide funds for the acquisition and development of wild life sanctuaries where hunting, fishing, and trapping will be prohibited.

"We recommend that it be the sense of this conference representing so typical a cross section of Upper Peninsula people and other Michigan interests, that we go on record as favoring a continued effort to the end that a sizable area of primeval hardwood forests in the Porcupine Mountain district be preserved for future prosperity, as an example of the typical hardwood firests that once covered our State and as a playground for the Middle West."

NOW AND THEN ON THE WICHITA

By Charles Allen, Wichita

There are some wolves and lots of coyotes on the Wichita. Wherefore, a young elk met tragic death. The catastrophe might have been averted at that, had not he of the regal family, in his frantic flight from those lust laden yelps and howls, dripping tongues, and murderous teeth, smashed head-on into a woven wire fence.

Immediately young elk steak was on the bill of fare.

He was pretty well eaten up when found by Supervisor French and Ranger Drummond. A bite of what was left after being seasoned with poison, might not set so well with any of the pack, should they again partake.

And speaking of wolves- Mr. French has seen two of the timber variety. Larger than the gray wolf and therefore more destructive, one of which went off on three feet after a crack with the six.

THINGS YOU PERHAPS DIDN'T KNOW

(From Lake States For. Exp. Sta. Technical Notes)

There is a close conformity between the type of forest cover and the animal life that inhabits it.

An investigation during the past summer by the forest biologist attached to the Station showed that certain groups of birds are as characteristic of certain types of forest cover as the trees in the forest themselves. For instance the purple finch, the siskin, the crossbills, and the kinglets are seldom to be found away from evergreens. The prime warbler is a sure indicator of the presence of Norway pine in its vicinity. The spruce partridge points to a balsam-spruce forest as its home.

Heavy aspen-white birch forest always has its complement of breeding oven birds, least flycatchers, and veeries, and the tamarack swamp is sure to hear the courtship song of the olive-backed thrush.

Each forest type seems to have its accompanying fauna - red squirrels in the evergreens, porcupines near white and Norway pines, and certain species of toads, frogs, snakes, and turtles for each group of tree associations.

That the forest cover is essential to the well-being of our wild life has long been appreciated by everyone who has given conservation matters any thought. But that the forests are greatly influenced by the wild life they shelter is a point that few people realize. We are only beginning to comprehend the immense value of certain birds and animals to our forests through their insectivorous habits. They control many pests that in their absence might wipe out acres of timber. We have just begun to understand such vital truths that the abundance of snowshoe rabbits today has a great bearing on the timber crop of 50 years hence.

To think that there may be more light under the shade of the forest trees than in the open seems absurd, yet this may happen in some forest stands. Recent measurements of light intensity carried on by the Station, on the Chirpewa National Forest, showed that on some spots in a thinned aspen plot the light intensity was actually higher than in the open.

Values of 100 to 107 per cent of total light were recorded several times. When ghe light measuring device was shaded from direct sunlight both in the open and the forest, the percentages were still higher -- sometimes 120 to 140 per cent of skylight.

These higher light intensities in the forest occur only in spots where the sun's rays penetrate the canopy unobstructed by leaves, and where the direct rays are augmented by light reflected from leaves. Aspen, birch, and other light colored or shiny leaves reflect a large proportion of the light they receive, while reflection from pine and other darker colored leaves is much less. In no case were intensities of over 100 per cent found in pine stands unless a birch or other hardwood was present to reflect the light. The effect is quite similar to that produced on the sunny side of a white building as compared to the sunny side of a dark colored building. The reflection of light from the white surface makes a brighter spot than occurs any place in the open.

These light relations have a direct bearing upon the success of underplanting aspen stands with pine and spruce. The investigations indicate that pine and spruce seedlings are not likely to die from lack of sufficient light when they come up under the shade of aspen stands, provided there is no understory of hazel or fern. Such understories may reduce the light intensities below 5 per cent, a value too low for good survival in this region. For best growth an intensity of thirty per cent is required.

Certain herbaceous and woody plants in the forest are as characteristic of certain forest types as are the trees themselves.

In its numerous studies, the Station found that whereevr there is a jack pine forest the ground cover under it is made up of bearberry, blueberry, sweet fern, and reindeer moss. In the hardwood forests of maple-birch-basswood the ground hemlock, beech, and maiden-hair ferns are the most characteristic plants. In swamp forests leatherleaf, labrador tea, sphagnum, and creeping snowberry are the most common associates.

Certain plants are characteristic not only of a given forest type but also of its growing capacity. In aspen, for instance, sweet fern indicates poor growth of only about two-tenths of a cord per acre per year, and the stands seldom reach merchantability. A ground cover of clintonia, meadow rue, and wild ginger, on the other hand, indicates a growth of close to nine-tenths of a cord per acre per year.

In jack pine, abundant hazel brush indicates a possible growth of nearly nine-tenths of a cord per acre per year. Blueberry and sweet fern indicate a growth of about two-thirds of a cord per acre per year. Where the ground cover is grey or green lichens, commonly known as reindeer moss, the growth may be expected to fall below one-half cord per acre per year.

In pure white pine, ground vegetation of twin flower, bracken fern, trailing arbutus and wintergreen indicates a mean annual growth of only about 90 board feet per acre per year at 50 years. Shield fern, solomon seal, hepatica, and yellow wood sorrel indicate a growth of about 215 board feet per acre. When mandrake, jack-in-the-pulpit, maiden-hair fern, and downy yellow violet are present, the growth may be as high as 315 board feet.

Wet spruce annd tamarack swamps are commonly covered with leatherleaf, labrador tea, sphagnum, sedges, and polytrichum mosses and the growth does not exceed one-sixth of a cord per acre per year. Hardwood swamps on the other hand, may have a growth close to a cord per acre per year, and have a characteritic ground cover of currants, elderberry, violets, service berry, and maianthemum.

Thus each kind of forest has its characteristic plants and certain plants indicate the growing capacity of the forest.

The Supreme Court of the District of Columbia has been requested by J. T. Jones, of Tacoma, Washington, a former Alaska promoter, to enjoin the Power Commission from granting any license on Swan Lake, one of the power sites covered by the Zellerbach application for power to be developed in connection with their Alaska paper-making project. Mr. Jones claims ownership to 480 acres of land there which will be occupied in part by the development. His claims are based on a so-called Alaska possessory right provided for by an Act of Congress in 1884. Under this Act Alaskans then possessing lands could continue to hold them until Congress makes some provision for granting title. Such provision has not been made to date. Jones's claim is a transferred Indian right, the courts having held these Indian rights to be transferable to others, including whites.

In 1928 the Service started action in the Land Office to test the validity of these possessory rights on the Swan Lake site. A hearing brought out that the Indian who transferred his alleged rights to the 480 acres, claimed possession of all the land in the watershed of the inlet into which Swan Lake drains, perhaps 125,000 to 150,000 acres, on the grounds that he and his ancestors have used it indefinitely for hunting and trapping purposes. The hearing also showed that since the transfer to the whites in 1904, no use whatever has been made of the 480-acre tract. The Land Office ruled against the claimant and the Secretary of the Interior, on appeal, sustained the ruling. The decision was that the Indians had made no such use of the tract in question as would entitle them to consider it their property, as hunting and fishing could not be considered as sufficient to give exclusive possession over vast areas; hence the whites by a transfer from the Indians could not obtain exclusive possession of the tract.

It is believed the court will state that it is without jurisdiction; that whether or not the Indian and white claims of possession are valid is a matter for the Interior Department to decide, and that thet Department has already ruled on it.

A meeting was held in Columbus, Ohio, on October 23 to arrange for a Forestry Special train to be run through Indiana and Ohio, the New York Central Railroad, Extension and Conservation Departments of both States, and the U. S. Forest Service cooperating. The train will be made up of three cars of exhibits; a refrigerator car carrying a million seedlings for free distribution; and a business car. Organizations in various towns will be asked to carry on the work after the train crew have staged a planting demonstration and distributed the stock.

Announcement has recently been made of the appointment of Arthur Ringland to the Bureau of Agricultural Economics in the agricultural foreign service, to be in effect a Forestry attache. His field is nominally all of Europe. The object of the position is to keep the United States in touch with European developments in the whole field of forestry as an aid in the development of American forestry. Mr. Ringland will give particular attention to land use in relation to forestry.

The Agricultural foreign service is being established under a recent act of Congress and the administrative direction is being centered in the Bureau of Agricultural Economics in order to insure coordination within the Departemnt The technical direction of Mr. Ringland's work will be handled by the Forest Service.

Forest Supervisor W. F. Kramer of the Luquillo National Forest is in Washington on a short detail. While here he will prepare a policy statement for the Luquillo. Although this Forest has been under administration since 1917, the problems so far dealt with have been chiefly those of protection. It is hoped that the time has now come when its administration can pass from the custodial stage to that of active development and use.

- - - - - - - - -

John W. Spencer from Region 2 came to help us on the Public Domain reports and we promptly drafted him to talk before the Biological Society at the Cosmos Club Saturday evening on game. He knows this subject, too, like nobody's business.

PLODDING THROUGH THE NIGHT

By H. E. Haefner, Siskiyou

On August 4, with 17 men we walked from Westfork in to the Carrol Creek fire during the night. We covered the 16 miles by 4:40 a. m. As we stubbed our toes against the imnumerable oak roots and grubs that are found in the old mail trail that we traveled, which we were unable to see, I recalled that many fire fighters have tramped these trails at night during the last 20 years to reach a fire by daylight or as soon as possible. It is a game only for the strong. Unless the airplane comes to the rescue as transport for fire fighters, many more fire fighters will tramp these trails at night to reach a fire at daybreak, or hours too late for best results, for in 23 years of National Forest administration only 2¼ miles of wagon or auto road have been built in the large area of the Siskiyou National Forest that lies north of Rogue River. At the present rate we will build about 10 miles of road in a century in this area!

(Cheer up; larger appropriations and the use of power-driven improved machinery are speeding up the entire road-building program to an extent not even dreamed of five years ago. Low cost roads are now being pushed rapidly into the most remote areas of greatest fire hazard. The Siskiyou's time is coming. Other regions where the past situation has seemed equally hopeless and the nights endless are already finding that their wildest dreams are actually coming true. - Ed.)

WHITE PINE

Research Bulletin 98 by Gevorkiantz and Zon, shows that white pine plantings will bring a return of from 3 per cent to 6 per cent compound interest on the investment, whether the operation is in New England or Wisconsin.

Some of the conclusions are as follows:

No other coniferous species in Wisconsin produces as high yields of wood per acre and at the same time retains its rapidity of growth until old age.

White pine is susceptible to injury from blister rust and weevil. Both blister rust and weevil are controllable and do not present a serious obstacle to planting on a large scale.

White pine on average sites will produce 10,500 board feet per acre at the age of 40; at 60, 36,500 board feet and at 80 years 59,000 board feet. (Scaled by International Log Rule).

On poor site its yield in 40 years is only 2,400 board feet, but on the best sites at the same age 19,000 board feet (scaled by the International Log Rule).

The yields of white pine in Wisconsin are about equal to those in New England.

The growing of white pine under the provisions of the forest crop law will earn 5 per cent on the original investment and annual carrying charges and still leave an additional profit on the better soils, particularly if the cost of the land and planting does not exceed $12 to $13 per acre. - H. N. W.

A TRUE STORY

(Swiped from California and adapted)

A certain officer of the Forest Service recently went hunting in the woods. A terrible storm came up. He looked for shelter, but there was none. It began to rain in torrents, so he crawled into a hollow log. It fitted snugly. The rain lasted for hours and hours and the water soaked through the wood. The log began to contract. When the storm was over he could not get out. The log held him tight. The officer knew that if he could not free himself he would die of starvation. His whole life flashed before him, especially his mistakes. Suddenly he recalled that he had not sent in a bit of news to the Service Bulletin for over a year. This made him feel so small that he was able to crawl out of the log without difficulty. (Other Bulletins please copy.)

THE EDITOR AS A CONNECTING LINK

Bulletins and newspapers have been prominently recognized for many years as means of supplying agricultural information. Only recently, however, have administrators realized that the preparation of information for popular use requires the services of a trained specialist - a specialist not only with a facility for explaining scientific facts in plain readable, accurate language, but with breadth of view, an aptitude for organization, and a keen and accurate understanding of human nature. In the earlier days all too many thousands of printed pages that were for the most part unintelligible to the man whom they were designed to influence were scattered over the countryside. Experiment station and college publications too often failed to present the results of research in clear, concise, practical terms. Scientists, although preeminent in their particular fields of research, were seldom expert publicists. What was needed was a person who could rescue the practical facts from obscuring and unfamiliar scientific terminology and impart them to farmers in language to which they were accustomed. The editor, as a connecting link between the man who knows and the man who wishes to know, supplied this need. - From Extension Service Circular 131.

WHO WOULDN'T LIKE THIS SCHOOL?

Once in a while a Forest Service Ranger finds a real treat in the forest. Those who attended the Feather River Training School for foresters in California in October enjoyed venison steaks for a few days when Rangers from the Shasta National Forest brought in three fat four-point bucks. Between meals the classes studied timber sites, marking and scaling, inspected timber sales, tree diseases, nursery practices, and tree planting. According to one of the lecturers, the work was "entertainingly and instructively" presented.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT. xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XIV, No. 46 Washington, D. C. November 17, 1930

FREE USE

By John B. Taylor, Deerlodge

Perhaps you have thought of "free use" as a petty business, but occasionally it assumes other aspects.

During the present business depression and its consequent unemployment, the workers of Butte entered with enthusiasm into the collecting of dead fuel wood from the adjacent Deerlodge Forest. They took to the woods with every conceivable sort of vehicle and while the ubiquitous flivver predominates it is not uncommon to see nice, shiny Buicks, Cadillacs, and even Packards loaded to the guards (literally) with fuel. And the contagion has spread to all classes. Yesterday I saw a distinguished and far from poverty-stricken member of the bar busily sawing wood.

It is impossible to estimate how much this use amounts to. Our best guesses indicate that for over two months, at least two hundred cords a day have come to town. It seems conservative to estimate that 20,000 cords will be taken during the season. The wholesale price of wood in Butte is $8 a cord, so the Forest can credit itself with a substantial contribution to the relief of the unemployed.

Of even more interest is the reduction in fire danger resulting from the removal of smelter fume killed timber along the roads. And since some of the amateur woodsmen will take anything sound or rotten and even root out old stumps, the Forest, as seen from the roads is rapidly assuming a "spick and span" appearance.

This use has attracted the attention of the papers. One editor in a very complimentary editorial attributed our somewhat favorable man-caused fire record to the personal interest in the Forest engendered by this use. And an official of the Anaconda Copper Mining Company, which permits similar free use in its own extensive land holdings, said the company would, if necessary, be willing to build roads to open up additional dead fuel for the free use of the public.

Incidental results include a fine market for anything that can be used to build trailers; a problem in traffic resulting from poorly built trailers and loads of wood with projecting ends; one death from a falling tree; indignant fuel dealers; and, best of all, development of a public feeling of proprietorship and responsibility for the Forest.

NOW AND THEN ON THE WICHITA

By Charles Allen, Wichita

Blood on a rock, Blood in the road. Ugh, ugh. Latter discovered only by kicking dirt aside. Blood is always a clue to something, and when Mr. French, Supervisor,once gets such a clue it's very apt to be trailed to the other end.

The man questioned had heard some shooting. "Must have been somebody shootin' ducks," he declared.

Mr. French gave him a disconcerting look and mentioned: "You must have exceedingly keen ears. It's three miles to the lake."

The other fellow squirmed, while Mr. French went on: "The shots you heard were much closer than that. You know more than you're telling and I'd advise you to come across."

"Guess you know more'n your're tellin'," the other admitted reluctantly "You got me in a hole, but I don't want my name mixed up in it."

It was impossible to get any more out of him.

Next day another suspect was run down.

That, "Possession is nine tenths of the law," has tinkled crisply from many tongues through many years. In this case it should be twisted to "Nine-tenths for the law." In other words, it should be nine-tenths of a certainty that the Judge soaks him.

A temporary camp was set on leased land. Preparations were in order for sowing some wheat. Rough customers in mountainous section Two boys only were in evidence The father came along later.

"Expect you have some deer meat on hand, haven't you boys?" Mr. French questioned casually.

The older boy addressed, perhaps thirteen, registered extreme fright in facial expression. Trembling hands were drawn from trouser pockets, and he moved about on uneasy feet. "We ain't got no deer meat," he denied.

"I'm inclined to doubt that," the Supervisor answered. "Anyway we'll just look around a bit."

He and Ranger Drummond entered a tent. A flour sack hanging from ridgepole had something in it that did not look like flour. "What do you suppose that is Earl?" From Mr. French.

Earl- "Expect it's deer meat."

It was.

Directly father of two boys came along. He steadfastly denied all knowledge of the deer meat.

Mr. French examined his car. "Looks like blood on the running board," came as a result.

From the other: "That ain't blood, that's tobakker spit."

"Oh no, it isn't," Supervisor French declared. "I'll admit that's tobacco spit there in front over the engine. But this on the running board is blood. Also it looks like you tried to wash some of it off and didn't do a very good job."

"I tell you its tobakker spit," the man insisted with grim determination.

Next the car was examined from inside and: "Here's some deer hair," came as additional evidence.

That ain't deer hair," came from the suspect, "that's dog hair."

There's some dog hair in there, too," the Supervisor said." but this is deer hair," and the evidence was displayed before the man's eyes. The Supervisor then continued: "It will be necessary for me to turn in a complaint and in the end you'll no doubt find that bacon would have been much cheaper."

PUBLIC RELATIONS TRAINING

By P. Keplinger, Washington

Having had some experience in attempting to teach public relations and having seen a good many attempts by others, I have come to the conclusion that it is the most difficult thing we have to teach. Of course, it is easy enough to talk about in generalities, but getting down to cases and actually helping a man to improve his public contacts in the day to day grind of getting the work done is another matter. For this reason, I want to tell you about some training work I saw the other day that was different. When you hear what it was, you will say, "That's nothing, anybody could do that. I wonder if that isn't just the point: A good device for putting over ideas usually is simple after some one has thought about it. It is thinking about it first that is hard.

The example I am trying to tell you about was at the Feather River Training Camp in Region Five. After a most excellent lecture on the subject, Hutchinson turned the meeting over to the Rangers. He had some five or six represent the public and ask questions just as the public is constantly doing. Each was a simple, common, everyday question such as is asked thousands of times in the course of a year, yet each had a point, just as so many seemingly unimportant questions do.

As I said before, that's easy enough; anybody could do it, but here are some of the reasons why it appealed to me: It took our simplest public contact and dramatized its importance. It did it in a way that will be remembered. For when those men get back on the job and are asked questions, and every man of them will be asked questions, each will remember that afternoon at Feather River. The scene will come back to them - the men, the questions, parts of the lecture, the importance of giving correct and courteous answers. All this they will remember - they simply cannot help it. The device used at Camp sets up an automatic mechanism that makes this inevitable. Without the device the lecture would have been forgotten. If I am mistaken in saying that each one does remember, I wish the exceptions would write and tell me about it.

And that is what we call good training in public relations or anything else - tying the instruction into the job so that the two become inseparably one.

ACCOMPLISHMENTS IN ROAD AND TRAIL WORK

By G. H. Lautz, Washington

The past year showed an increase in estimated miles of roads and trails desired for inclusion in the Road and Trail Systems as proposed for the National Forests. The Highways were increased by 691 miles, the Development Roads by 5,904, and the Trails by 18,681 making the totals 16,023, 51,703 and 149,768 miles, respectively, for the systems of Forest Highways, Forest Development Roads and the Trails. The estimated expenditures required to complete these three Systems have been placed at $166,097,400, $60,497,200 and $5,993,600, respectively, totaling $232,588,200. Considering only the present mileage of unsatisfactory and non-existing roads, the cost per mile of the required construction would be approximately $19,057 and $1,911 for Forest Highways and Forest Development roads and $130 for Trails.

During the past fiscal year 1,726 miles of roads and 6,175 miles of trails were constructed, while 19,898 miles of roadway and 65,785 miles of trails were maintained. This represents an expenditure of $10,356,172, of which $8,883,595 was Federal Funds and $1,472,577 Cooperative funds.

The total expenditure for Forest roads and trails to July 1, 1930 has amounted to

$111,179,871, representing $89,122,195 road funds, $2,152,933 other Federal Funds, and $19,904,743 Cooperative funds.

This expenditure has accomplished the construction of 18,455 miles of roads and 53,452 miles of trails. The major work which is handled by the BPR has to date cost on an average of $14,368 per mile. The minor work handled by the Forest Service has to date cost $1,327, while during the past fiscal year the average cost per mile of this construction was $26,121 and $1,154, respectively. The trails constructed to date cost on an average of $171 per mile, while the work during the past fiscal year cost approximately $141 per mile.

With all this construction there are still remaining 2,037 townships within the boundaries of the National Forests in the Western States which are without roads of any kind. Idaho has the largest number of such townships, 383, while Montana is second with 285.

At present there is an annual authorization of $12,500,000 for the construction and maintenance of roads and trails included in the transportation systems as planned for the National Forests. Of this amount $9,500,000 is legislatively set aside for Forest Highways; that is, roads of primary importance to the States, Counties, and Communities within and adjacent to the National Forests but of value to the Forests. The remaining $3,000,000 is provided for the construction of Development Roads and Trails which are required for the protection, administration, development, and utilization of the National Forests.

THINGS YOU PERHAPS DIDN'T KNOW

(From Lake States For. Exp. Sta. Technical Notes)

Stratifying the seed in a moist medium and putting it away in a cold cellar for 30 days prior to sowing overcomes the sluggishness of white pine seed sown in the spring. Tests made with stratified seed have conclusively shown that stratification increases the germination per cent in the laboratory from 20 to 95 at the end of 45 days and that the pretreated seed completes 95 per cent of its total possible germination within 20 days after sowing.

As a result of these tests it can be definitely recommended that when it is desirable to sow white pine seed in the spring, it be mixed with sand or sawdust previously moistened, and be put away in a cellar whose temperature is between 33° and 50°F., for a month before the normal date of sowing. The sand or sawdust should be sifted while dry, through openings of not more than 7/64 inch, which sized mesh will pass very few seeds. This fine material should then be wetted with 1-2 times its own dry weight and the seeds thoroughly mixed into it. After standing 30 days, with occasional shaking or stirring, the media may be partially dried so that it can be worked through the same screen without difficulty. The seed should then be sown promply. From the standpoint of ease of separation, fine pine sawdust can be recommended above any other media for holding the moisture.

- - - - - - - -

As a part of its investigation of the possibility of converting aspen into coniferous forests, the Station established three plots in aspen on the Chippewa National Forest last fall. One plot was clear cut, thirty-five per cent of the stand was removed from the second, and the third was left uncut.

This spring Norway pine, white pine, and white spruce were sown in 50 specially prepared spots on each plot. Thirty-two days after sowing the clear cut plot had Norway pine seedlings in 48 spots, white pine in 26, and white spruce in 21. The partially cut plot had Norway pine in 14 spots, white pine in 4, and spruce in 5. The uncut plot had Norway pine in 14 spots, white pine in 2, and spruce in 8. Since the seed was sown with equal care in all three plots, the difference in germination is probably due to the higher soil temperature of the clear cut plot.

Last fall 425 Norway pine and 425 white spruce were planted on each of the three plots. During the winter and early spring 51 spruce died on the clear cut plot, 31 on the partially cut plot, and 28 on the uncut plot. Some spruce have died since May on the clear cut area. Norway pine showed practically 100 per cent survival in all three plots. From the standpoint of germination and survival, there seems to be little difference between the clear cut and uncut stands.

While clear cut plots apparently offer the most favorable place for the early germination of seed, they fail to afford the protection from the rigors of winter and early spring for planted stock that uncut and partially cut stands do.

NEWSPRINT MADE FROM PINE IS EXPECTED TO ENRICH SOUTH

A chemistry Aladdin recently laid before an Atlanta Chamber of Commerce luncheon white newsprint paper made from a new source--slash pine.

He said it opens the prospect of a new and wholly American supply of newsprint and high-grade book paper made from Southern pine trees, probably of all sorts.

The Aladdin was Dr. Charles H. Herty of New York, former president of the American Chemical Society. He made his discovery public without reservations, and proposed that Southern business men make use of the knowledge to enrich the South.

Southern pine long has been used to make paper of a yellow variety, Dr. Herty said, but not to compete with the high-grade sulphite process newsprint and white book paper made from spruce.

His new paper was made of the one variety of Southern pine supposed to be the least capable of producing regular newsprint. It was held to contain too much resin. Last Spring Dr. Herty announced at a meeting here the discovery that resin in young slash pines is mostly myth, and at the recent luncheon he quoted the International Paper Company's research laboratory in confirmation.

Furthermore, Dr. Herty said that there is not more resin in any of the Southern pines than in spruce. The resin forms in the heart wood of the Southern pines after they are about 25 years old, when, he said, they usually are too large for pulpwood.

The new white paper sample was made at a paper mill in a metal basket suspended inside a "digester," which was otherwise filled with spruce undergoing the regular sulphite process. Not only did the supposedly stubborn slash pine digest as easily as the spruce, said Dr. Herty, but it whitened with the same amount of bleach. Its fibers were as long and as strong as spruce.

"This is the first year, so far as I am aware," he said, "that slash pine has been made into this grade of white paper.

"Experiments now under way, but not yet completed, indicate that the same thing can be done with longleaf pine.

"I obtained these results through experiments in paper mills performed through the courtesy of my friends. If the South is going to put its 150,000,000 acres of cut-over lands and abandoned farms to profitable reforestation, you have got to be able to answer the questions of the paper manufacturers as to what your trees will do. You have got to go into research and get the answers quickly." - Clipped

YE EDITOR DISCOVERS

The Camp Manufacturing Company of Franklin, Virginia, has established a very interesting experiment along the highway which passes through its holdings. On one area the red gum and some other hardwoods form a fairly complete and dense understory beneath the loblolly pine. When this stand is cut the red gum undoubtedly will take possession of the site and eliminate any possibility of loblolly pine reproduction. On the second area, which has been fenced, a band of goats has been kept. The difference between this plot and the other is quite striking. On the grazed area beneath the pine is a dense stand of loblolly pine reproduction in which there is not a single stem of hardwoods. With the aid of the goats the company has been able to establish the nucleus of a pine stand, in which it is greatly interested while it is not now interested in the hardwoods because they are chiefly unmerchantable.

- - - - - - - - -

Mr. LeBron, a representative of the Hercules Powder Company has gone to Minnesota to spend approximately six weeks in experimenting with the use of explosives in making fire line under conditions where this method promises a degree of speed which can not be attained by other advanced methods. He will work in cooperation with representatives of Region 9 and the Lake States Experiment Station.

- - - - - - - - -

The Forest Service is sending congratulations to the Forest School at Eberswalde, Germany, on the school's one-hundredth anniversary. These congratulations are in the form of an illuminated parchment with gold-colored hand-drawn letters and design bearing the message: "The Forest Service of the U. S. Department of Agriculture congratulates Forstliche Hochschule, Eberswalde, Germany, upon the occasion of its one-hundredth anniversary."

- - - - - - - - -

One of the best sellers among Service publications has been the little pocket-size pamphlet "Government Forest Work." In its present form this circular has gone through six editions, the first being issued April, 1922. A limited revision was made in April, 1925. When the last reprint is exhausted the total number of copies distributed will amount to some 200,000. This distribution has been largely in response to requests for information. Another revision is on the way and it will probably be extensive, because the work of the Forest Service has grown so much in the last decade.

- - - - - - - - -

Region 6 has been requested to ship one of the Killefer fire line plows developed by that Region to the Ouachita National Forest for experimental use in Arkansas. The outstanding problem in Arkansas is prevention of mancaused fires, but speed in construction of held line is also important and the Arkansas slopes may be gentle enough so that a small tractor and the Killefer plow may prove a valuable aid in corralling fires on the Arkansas National Forests.

- - - - - - - - -

Although Mr. Keplinger was transferred to the Washington office last spring, he spent the season largely in travel in the western Regions and postponed transfer of his family and household effects until this fall. On November 5 he arrived in Washington and is busy finding a place to live in the Capital City and a place to work in the crowded Atlantic Building.

- - - - - - - - -

Mr. Headley has returned to Washington after a four months' trip to all Regions except Alaska. On the whole, he is very much pleased with what the Service has accomplished in fire control during the season of 1930.

NATIONAL RESEARCH COUNCIL FELLOWSHIPS AVAILABLE

Appointments to fellowships in the biological sciences, including forestry, are to be considered by a National Research Council board about the first week in February, 1931.

The fellowships are open to citizens of the United States and Canada, of both sexes, who possess the Ph. D. degree or its equivalent. They are intended to promote research in fundamental branches of the sciences, specifically through training of selected investigations. The present policy is to restrict appointment to applicants in the early stages of a research career who have demonstrated ability of a high order and who give promise of developing individual judgement and points of view in investigative work. The appointments are for full time; fellows may, however, be permitted to give a portion of their time to advanced teaching or to attendance on advanced courses of study. Fellows are appointed for a period of 12 months only, but are eligible for reappointment. American fellowships carry a basic stipend of $1,800, which may be adjusted to individual needs. For foreign fellowships the stipend is $1,800 or $2,400, according to whether the Fellow is single or married, with additional allowances to cover travel. Appointment may become effective at any time of year.

Persons wishing to be considered for appointment to these fellowships should send inquiries as to the mode of application to the Secretary, Board of Fellowships in the Biological Sciences, National Research Council, B and 21st Streets, N. W., Washington, D. C.

CONFERENCE ON WATERSHED CONDITIONS

Watershed conditions on the Sawtooth Forest with special attention to the South Fork of the Boise River, which drains into the Arrowrock Reservoir were given considerable study last summer by Assistant Regional Forester C. N. Woods, by Dr. George Stewart, Senior Ecologist, and F. G. Renner, Associate Range Examiner of the Intermountain Forest and Range Exp. Sta., and by Supervisor Benedict of the Sawtooth. These men recently discussed their findings with Regional Forester R.. H. Rutledge.

Dr. Stewart said that in places the layer of organic soil, that is the top layer which contains several times as much plant nourishment as the under layer, has been removed by sheet erosion. There is danger that this condition may become widespread and reduce the capacity of the soil to grow vegetation.

Supervisor Benedict stated that 300,000 sheep and 10,000 cattle were grazed on the Sawtooth in 1918. By 1920 this number was reduced to 235,000 sheep and 10,000 cattle. Reductions have continued until at present there are only 175,000 sheep and 5,000 cattle, a reduction of 60,000 sheep and 5,000 cattle since 1920, but still the range seems to be overstocked. It was suggested in the discussion that the removal of the top layer of soil had depleted the productivity of the range enough to more than off-set the advantage gained in reduction of numbers.

The conference agreed that relief was needed and that all surplus gained through voluntary reductions should be withheld for protection. Other methods for securing relief were also discussed and it was decided to continue the studies in order to build up a convincing record of what is taking place on this important watershed. It was also decided to close a fairly large area to grazing to determine how fast the layer of organic soil could be restored and what productivity could be expected under ideal conditions. - R.4 Bulletin.

NEW INSTRUMENT AIDS WOOD DRYING TECHNIQUE

The wood moisture balance, a simple device for reading directly the trend of moisture content of wood in the woodworking shop, dry shed, or storage shed, is a recent contribution of the Forest Products Laboratory to wood seasoning technique. The value of the device is based on the well-known fact that there is a definite moisture content for wood -- the equilibrium moisture content -- corresponding to any given combination of relative humidity and temperature; the equilibrium moisture content of wood in a room at 70° F. and 30 per cent relative humidity is, for instance, a trifle over 6 per cent.

The wood moisture balance consists essentially of any kind of simple balance on one side of which is suspended a strip of wood cut to a calculated weight of exactly 100 grams, ounces, or other convenient unit when oven dry. If the wood is thin — say an eighth of an inch in thickness -- and its oven-dry weight is offset by a corresponding weight on the opposite side of the beam, the moisture which it picks up to come to equilibrium with the surrounding air can be determined directly in per cent of oven-dry weight of the wood by balancing the wood with weights added to the 100 units already on the opposite side of the beam. In the case of a spring balance, subtracting the oven-dry weight of the wood from the reading would give the moisture per cent. - Forest Products Laboratory News Note.

FROM MASSACHUSETTS

"Our wild life is a great State asset. This is true whether considered from the economic aspect of fur and food, or as protection to our forests and crops from insects, or the health-giving pleasures of pursuit. The aesthetic value is very great. Massachusetts is famous for its beautiful countryside, and its inspiring seashore. We cherish our wild life that adorns and enlivens and makes vocal all this glorious region. It would be sad indeed if an abundance of these creatures were not maintained to add to our joy of living.

"It is an important function of government to promote the health and contentment of our people. The preservation and increase in the number of trees, the perpetuation of our natural flora, and the maintenance of an abundance of desirable wild life will provide the attractive environment which is essential." - Governor Frank G. Allen

- - - - - - - - -

The Green Bay region of Wisconsin supported 40 saw-mills in 1860. All these cut pine. These mills had a capacity of 130 million feet and cut about 80 million, an average of 2 million each. The largest had a capacity of 5 million a year. About 2,000 men were employed in this work, which works out about 200 board feet per man per day. Some 100 vessels were used on Lake Michigan to transport the lumber to the Chicago market (there were then no railroads.) These boats employed about 10 men each. The largest sawmill maintained three "very large vessels."

- - - - - - - - -

The value of research on the part of National Forest administrative forces in connection with fire prevention, timber, sales, planting, and other technical activities, should be strongly emphasized. The importance of keeping track of reproduction following various methods of cutting in different forest types is self-evident. It affords the only means by which the success of the methods used can be measured, and timber sale records ought to include some periodic statement of the condition of the resulting stand. Although the Experiment Station is doing intensive work on this subject, the experiments are at relatively few isolated places and cannot be expected to yield results that will be locally applicable to specific sales. The National Forests can therefore hardly afford to be without some sort of a systematic record of results, and money devoted to at least a small tally and measurement of the reproduction on representative and distinctive sale areas would be well spent.-From Appalachian For. Exp. Sta. Annual Report.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XIV No. 47 Washington, D. C. November, 24, 1930

ILL DIRECTED FOREST USE

By F. H. Eyre, Washington

Much has been written on forest devastation by lumbering, insects and diseases, and damage by grazing, to say nothing of fire, but little has been said about the trampling effect of the public "foot" on the forest. A report by Dr. E. P. Meinecke, Pathologist of the Bureau of Plant Industry, entitled "The Effect of Excessive Tourist Travel on the California Redwood Parks" cites a number of cases where there have been decidedly too many feet. Essentially, he says that the fundamental object of the withdrawal of Redwood groves is their preservation for the enjoyment of present and future generations of Americans. "If the Redwoods were merely saved from the axe to fall victims to the slow but fatal change in their living conditions brought about by excessive tourist travel, the main purpose of creating the parks would certainly fail." Meinecke's findings should be of interest to all who are charged with the administration of forest areas which are used by the public.

The author first compares conditions in the redwood groves with those of city parks. He points out that old forest trees are unlike those in city parks which are relatively young, have been cultivated and planted by man, and can be quickly replaced. In contrast, the forest association is made up of "a wild population of trees which have attained old age as a result of highly complex competition with each other and the many other plants..............."

"It is well known that plants, grown old in the wild state, do not take kindly to contact with civilization." The redwood, although a very hardy tree as attested by its great age, is no exception to this rule. The investigation of conditions in several parks disclosed the fact that many of the redwoods have been severely injured by trampling, that some associated species such as Douglas fir and tanbark oak have been killed, and that over large areas the lower vegetation of ferns and flowering plants has been entirely destroyed. The effect of this heavy travel upon the soil has been to compact the surface into a tough, leathery layer which permits neither air nor water to penetrate. The feeding roots of the trees which are always close to the surface have been killed in large numbers wherever soil compacting has occurred. Where not killed outright by the compacting of the soil they function but poorly. Natural conditions have thus been completely altered. They can not be restored, but there is hope for some improvement.

To counteract the concentration of travel the author recommends first, that the main camping and parking areas be provided for in parts of the groves away from the beauty spots which contain the largest trees and that all buildings be removed. Then by properly placing natural obstacles such as logs, heavy limbs, etc. the public can be made to travel over restricted lanes and trails. And finally, by loosening the soil through careful cultivation it is hoped that favorable soil conditions can be restored in the most severely trampled areas.

There are many species in other parts of the country which may be more susceptible to tourist traffic damage than are the redwoods. It is evident, therefore, that public recreational use should be provided for by most careful planning wherever it is desirable to preserve natural forest conditions.

LUXURY FORESTS

(Excerpts from an article by J. W. Tyler in Pa. Dept. of Forests and Waters Service Letter)

In the Valley Forge District comprising as it does the seven counties adjoining the metropolitan areas of Philadelphia, Allentown, Bethlehem, and Reading, there is a phase of forestry which is becoming more and more prominent. That is the problem of handling the woodlands on the estates. There is a constant increase in the number of estates though the estate woodlands make up only a comparatively small portion of the total forest area in the District. More and more, the estate owner is turning to his woodlands as a source of pleasure and enjoyment. My observations while engaged in a timber survey of the section indicate that entirely different recommendations must be made for this type of woodland than are made for a timber forest. The owner is little interested in growing timber. He wants to improve his timberland so that it will always be a source of beauty and pleasure to him. It must be made easily accessible through paths and roadways, yet must retain a "wild" appearance. In other words, he wants a "Luxury Forest."

A public forest policy, to be successful, must have the support of the estate owner, as well as everyone else, and we can better secure his support if we interest ourselves in helping to solve the problems in relation to his own private forest. If we expect cooperation with our plans we must in turn give cooperation. It cannot be gotten by a one-sidedness on our part.

Luxury Forests have been described as the "Private estates of the wealthy, parks, and game preserves." They are the forests which are managed primarily for the greatest amount of enjoyment.

In every old forest or woodland there could be located certain small areas that would measure up, more or less, as Luxury Forests, but in most instances such forests must be planned and executed by man. In planning a Luxury Forest many factors must be considered. The contour of the ground would influence any plan to be made. A steep hillside would have to be treated differently from flat ground. The species present on the ground would influence the choice for thinning out or leaving the trees. The underbrush must be removed, or left, as it would fit into the plan. Streams should be considered carefully. Everything must be done to accentuate every natural feature. A bowlder can be made an object of beauty by giving it the proper treatment. Even a few old, decayed logs are desirable.

A road and trail system should be put in. Grades should be kept gentle. Turns should always be long. Roads and trails should be located so that the outstanding natural features are easily and attractively reached. A winding road or trail is the best as it enables you to bring in the unexpected views which are a surprise and a delight for the beholder. If there were roads and trails already present on the area these should be adapted to conform with the plans. Bridges should be rustic in nature to secure the desired "atmosphere."

Rustic benches should be built and placed occasionally along the trails, trying to locate them where the surroundings are particularly beautiful. Rustic pergolas might be advantageously placed if the area is large enough to warrant them. Streams and springs should be cared for. A small stream can be greatly beautified if stones are so placed across it that low dams are formed. These dams will form small pools of water which are very attractive. Springs should be walled up, though a dry built wall would be better than formal masonry walls. Every precaution should be taken in order to insure the safety of the area from fire.

Protection from insect and fungus troubles is another important consideration. The Luxury Forest represents an investment which would suffer partial or complete loss from the depredations of insect or fungal enemies. The value of the trees and other plants lies in their being healthy so that they may have the best form and growth.

I have given many factors influencing the building of a Luxury Forest, but one I have not mentioned. That is the personality of the builder. The man who works towards bringing a beautiful forest out of a nondescript woodland must be an artist. He must be able to visualize the results just the same as the man who works on canvas. The one works with paint and color to show on canvas what the other builds in reality. The degree to which a man has this sense of the artistic will greatly influence the results he obtains.

The subject of the Luxury Forest is a fascinating one to me, as I believe it is to all of us. It can never become a major line of endeavor for us all, but all should give it thought. Our park areas are the places where we as foresters can put into practice some of our own ideas concerning a Luxury Forest. "Beauty makes man noble" and there is no beauty so inspiring as that of Nature as found in the woods.

THE RURAL SCHOOLS AND THE SOLUTION OF THE FARM PROBLEM

(Excerpts from a radio talk by Mr. C. C. Teague, Member of the Federal Farm Board)

The topic assigned me implies that there is a "farm problem" and anyone familiar with the facts is well aware that there is not only one but that there are myriads of "problems" involved in the big task of bringing about the rehabilitation of American agriculture, and of restoring its income to parity with that derived from other industries.

Only a casual consideration of the case will convince anyone that our present situation with respect to agriculture in this country is not the result of local or transient causes. There is ahead of us a long-time educational job to insure that economic conditions are appreciated, that economic laws and forces are appraised and understood. The principles of cooperation must be disseminated and inculcated to offset the forces of a competitive disintegrating individualism.

The rural school can and must become the key to unlock the door of economic and social security and stability in the agricultural industry. And, with this grave responsibility resting upon it, it may well be asked whether, at the present time, rural school programs are designed to cope with the situation. Too often such programs are lacking in definite relationship to rural life. Too frequently they are but cheap imitations of programs for city schools. Not infrequently the instruction leads definitely away from rural life rather than towards it.

For the first time in the history of the nation, assisting and developing agricultural cooperation among farmers is made the settled policy of the Government. As a result there is a pronounced psychological urge in its behalf. Agencies of every kind are vieing with each other to participate in the cooperative program. Is the time not ripe for enlisting the rural schools in the cause which means, in the long run, that cooperation, properly supported by those whom it is designed to benefit directly, will reduce economic depression, restore agriculture to a parity with other industries, and eliminate some of the social evils now adversely affecting rural life.

If cooperation is to become the animating motive of the farm business, the rural schools, unless they mean to defeat their real purpose, must teach the facts of cooperation to their pupils, inculcate the laws of cooperation in their minds, and instill the spirit of cooperation in their very hearts.

It was through the teaching of the folk schools of Denmark that cooperation became the dominating feature of their agriculture. With the lever of cooperation, Danish agriculture was lifted from the depths of depression to the pathway to prosperity. Can America hope to develop a national system of cooperation in agriculture if the rural schools are silent in its behalf or ignorant of its real value and intent?

NOW AND THEN ON THE WICHITA

By Charles Allen, Wichita

Undoubtedly that deer had a human trait. She could have taken an easier route out of the trap. Her prowess could have been displayed to better advantage, though, by jumping over the motor truck or even my head, but after a look at each of these barricades, she decided the five and one half foot wire fence, on one side of the road, was well enough suited for the purpose. Well enough, but she knew that she had it all over the rest of animal creation in grace and beauty of leaping motion and here was an opportunity to show off. Undoubtedly she pined for a seven foot fence.

A stone wall on one side of the road was hardly high enough for staging the show. There she stood in the middle of the road. Trapped, so to speak. The truck approaching from one direction and myself from another. A little nervousness was displayed in quick glances around, from large, dark eyes, as the end barricades approached. The audience was not large, but she evidently sensed appreciation and when the approaches were close enough, that deer took one little bound for a start and chose the wire fence.

She cleared it! I haven't words to describe the fascination of that animal's leap. I rely on the imagination of the reader.

WHAT HAPPENS TO TREE-SITTERS

A grave zoological problem was recently brought to light at the Camp Ockanickon experimental forest of the Allegheny Experiment Station.

Assistant Silviculturist O. M. Wood, while collecting cones for seed, was violently attacked by a large bird, presumably an owl or a hawk. Wood was working in the top of a scrub pine about 40 feet above the ground, with his head and shoulders above the flat-topped crown, when the bird struck him on the side of the head and the left arm, scratching his arm slightly. Wood says although he had full view of the horizon above the tree top, he had no intimation of the bird's approach until it struck, nor did he see it until it was some distance from the tree again. R. T. Clapp, working on the ground, saw the bird, but was unable to tell whether it was an owl or a hawk. The attack occurred about 3:30 in the afternoon, but the silence of the bird's approach suggested an owl rather than a hawk. Fortunately Wood was wearing a lineman's belt and safety strap; otherwise the force, as well as the unexpectedness, of the blow might have knocked him from the tree.

Members of the Station staff, upon hearing of this incident, suggested that the bird was a woodpecker rather than a hawk. Others have suggested that the bird's brooding instinct was aroused upon seeing Wood's head. However, Wood assures us that he was wearing a hat, which dispels both of these theories. - Allegheny For. Exp. Sta.

"THE DISCOVERY OF SUGAR PINE"

(From "Journal Kept by David Douglas during his Travels in North America, 1823-1827.")

Thursday, Oct. 26, 1826. - Weather dull and cloudy. When my people in England are made acquainted with my travels, they may perhaps think I have told them nothing but my miseries. That may be very correct, but I now know that such objects as I am in quest of are not obtained without a share of labour, anxiety of mind, and sometimes risk of personal safety. I left my camp this morning at daylight on an excursion, leaving my guide to take care of the camp and horses until my return in the evening, when I found everything as I wished; in the interval he had dried my wet paper as I desired him. About an hour's walk from my camp I was met by an Indian, who on discovering me strung his bow and placed on his left arm a sleeve of racoon-skin and stood ready on the defence. As I was well convinced this was prompted through fear, he never before having seen such a being, I laid my gun at my feet on the ground and waved my hand for him to come to me, which he did with great caution. I made him place his bow and quiver beside my gun, and then struck a light and gave him to smoke and a few beads. With my pencil I made a rough sketch of the cone and pine I wanted and showed him it, when he instantly pointed to the hills about fifteen or twenty miles to the south. As I wanted to go in that direction, he seemingly with much good-will went with me. At midday I reached my long-wished Pinus (called by the Umpqua tribe Natele), and lost no time in examining and endeavoring to collect specimens and seeds. New or strange things seldom fail to make great impressions, and often at first we are liable to over-rate them; and lest I should never see my friends to tell them verbally of this most beautiful and immensely large tree, I now state the dimensions of the largest one I could find that was blown down by the wind: Three feet from the ground, 57 feet 9 inches in circumference; 134 feet from the ground, 17 feet 5 inches; extreme length, 215 feet. The trees are remarkably straight; bark uncommonly smooth for such large timber, of a whitish or light brown colour; and yields a great quantity of gum of a bright amber colour. The large trees are destitute of branches, generally for two-thirds the length of the tree; branches pendulous, and the cones hanging from their points like small sugar-loaves in a grocer's shop, it being only on the very largest trees that cones are seen, and the putting myself in possession of three cones (all I could) nearly brought my life to an end. Being unable to climb or hew down any, I took my gun and was busy clipping them from the branches with ball when eight Indians came at the report of my gun. They were all painted with red earth, armed with bows, arrows, spears of bone, and flint knives, and seemed to me anything but friendly. I endeavored to explain to them what I wanted and they seemed satisfied and sat down to smoke, but had no sooner done so than I perceived one string his bow and another sharpen his flint knife with a pair of wooden pincers and hang it on the wrist of the right hand, which gave me ample testimony of their inclination. To save myself I could not do by flight, and without any hesitation I went backwards six paces and cocked my gun, and then pulled from my belt one of my pistols, which I held in my left hand. I was determined to fight for life. As I as much as possible endeavored to preserve my coolness and perhaps did so, I stood eight or ten minutes looking at them and they at me without a word passing, till one at last, who seemed to be the leader, made a sign for tobacco, which I said they should get on condition of going and fetching me some cones. They went, and as soon as out of sight I picked up my three cones and a few twigs, and made a quick retreat to my camp, which I gained at dusk. The Indian who undertook to be my last guide I sent off, lest he should betray me. Wood of the pine fine, and very heavy; leaves short, in five, with a very short sheath bright green; cones, one 14½ inches long, one 14, and one 13½, and all containing fine seed. A little before this the cones are gathered by the Indians, roasted on the embers, quartered, and the seeds shaken out, which are then dried before the fire and pounded into a sort of flour, and sometimes eaten round (sic). How irksome a night is to such a one as me under my circumstances! Cannot speak a word to my guide, not a book to read, constantly in expectation of an attack, and the position I am now in is lying on the grass with my gun beside me, writing by the light of my Columbian candle - namely, a piece of wood containing rosin.

YE EDITOR DISCOVERS

In a talk before Department Extension workers on November 12, Major Stuart outlined the policies of the Forest Service and some of its activities bringing in revenues to the Federal Government.

There is something distinctive in our National Forest enterprise, Major Stuart said, as it has to do with quick conduct of business. Because we are so highly decentralized it is possible to conduct our business more expeditiously. He explained how this permits fixing responsibility in individuals, giving as an example the responsibility of the Ranger for the work going on in his district, except for large special projects, thus requiring of him knowledge of tree values, log values, lumber values, tie values, grazing, etc. Major Stuart told of the job analysis that is now being made, which actually takes the job in a given ranger district, a given Supervisor's job, and jobs in the Regional and Washington offices and analyzes them. This constitutes, he said, a very valuable source of data for such matters as allotments of funds, allocation of work, changes in boundaries of ranger districts and between National Forests, and the coordination of financial plans between various Service units. So that in a very real sense the National Forest enterprise is commercial and necessarily businesslike. Yet the National Forests were created and are being administered for a much larger purpose than for their commercial aspects. The bigger purpose includes "their intangible as well as their tangible values." For example, there are some 335 waterpower projects on the National Forests, 782 municipalities dependent for their water supplies upon watersheds wholly or partly within National Forests, 87 per cent of the irrigation enterprises in the twelve western States are served by National Forest watersheds, and 90 per cent of the irrigated farms in these twelve western States are served by the watersheds of the National Forests. There are also large wild life, recreational, and other non-revenue producing benefits afforded.

- - - - - - -

Work is well under way on the foundation of the new Agricultural Building into which the Forest Service is supposed to move. We have been given a tentative allocation of space and the committee is busy finding out whether it is possible to squeeze us into the space allotted.

- - - - - - -

The training men from the six western Regions met at the Region 5 training camp early in October and while there outlined a discussion course for Supervisors and Regional office men. The subject chosen was "Principles and Trends in Organization." This is merely an extension of the management subjects discussed during the last two years.

- - - - - - -

Pine Flats, where Pasadena will develop a city recreation park is to have a new name, according to word received from the National Geographic Board. It will be named Charlton Flats, in memory of the late R. H. Charlton, for twenty years Supervisor of the Angeles Forest and responsible, in a large measure, for placing the scenic Sierra Madres at the disposal of rest and recreation seekers of Pasadena and elsewhere. Mr. Charlton was injured in an automobile accident in Tennessee and died last February at Hot Springs, Arkansas. At the time of his death he was Supervisor of the Ouachita.

- - - - - - -

Region 9 recently acquired by transfer from the Biological Survey two 26 foot boats, which they intend to equip as fire boats for use on the Superior Forest. By the use of high powered pumps they hope to be able to reach about a mile from the shoreline of lakes with water for fire suppression. The Region is congratulating itself on the acquirement of these boats without cost by transfer from the Biological Survey.

WHITE PINE LUMBER COMPANY PURCHASES LARGE BODY OF TIMBER

The White Pine Lumber Company was the high bidder for 207,900,000 feet of National Forest sawtimber, located on the Jemez Division of the Santa Fe, which is the largest body of National Forest timber ever advertised for sale in New Mexico. The stumpage rate is $2 per M feet for western yellow pine, Douglas fir and limber pine, and $1.00 per M feet for Engelmann and blue spruce, cork bark and white fir. The contract allows the company until June 30, 1940, for the removal of the timber and the stumpage will be subject to reappraisal at three-year intervals after 1932.

This sale brings to a close negotiations begun in 1920, when plans for the construction of the White Pine mill and railroad were first conceived. The consummation of this sale assures a supply of timber to an established industry for years to come. It means community stability and a market for local labor. It also means increased school and road funds to the State and the community. - Region 3

THAT PHOTOGRAPH MAY LOOK GOOD TO OTHERS

If you have a photograph that pictures the activities of the Forest Service, don't hide it under a bushel of reticences. Send it in.

Any little snapshot that tells or illustrates a story of the forester's work may help to keep the Forest Service's work before the public. Or it may make clear to someone what you would find difficult to explain in thirty typed lines with some interlineations.

Every day of the 51 weeks between New Year's Day and Christmas is a big day somewhere and calls for the use of photographs in the news. Your good clear shots with the camera may ring round the world!

Pack a mean camera, and be your own judge! If the picture tells a good story, it's going to be pretty hard to bury it in the files.

BELIEVE IT OR NOT!

The District of Columbia had a 50 acre fire which probably will not get into the official records. Fire started from a passing railroad and burned the litter, weeds, and undergrowth in a patch of woods, all well within the District line. Water from city hydrants was used to extinguish it only along one side when it threatened some dwellings. One fireman was injured, he was struck by an ax in another man's hands.----E.N.M.

GEORGE L. DRAKE RESIGNS

By Jno. D. Guthrie, R-6

George L. Drake, assistant in the Office of Forest Management in the Regional Office, resigned on September 30 to become assistant to the president of the Simpson Logging Co., Shelton, Washington.

Mr. Drake has been in the Forest Service continuously from 1910, and since 1919 has been assistant in Forest Management. He is a forester by education and training, a graduate of the Pennsylvania State Forest School, has had wide experience throughout Oregon and Washington, and spent four years in forest work in Alaska, holding such positions as forest guard, assistant, examiner, deputy supervisor, lumberman, and logging engineer. Drake has made a distinct place for himself in R-6 which will be difficult to fill.

On October 1, he became assistant to Mark E. Reed, president of the Simpson Logging Company and will have general supervision of their woods operations near Shelton, Wash. No decision has been reached as yet on a successor to Drake.

SUPERVISOR BROADBENT FINDS WEATHER BUREAU REPORTS VALUABLE

Mr. E. W. Holcomb,
Weather Bureau,
Pensacola, Fla.

Dear Mr. Holcomb:

I wish to formally express the appreciation of this office for the whole-hearted cooperation which you have given us. Your daily weather forecasts during the fire season have proved most valuable. Time after time we have rearranged our forces due to a forecast of favorable or unfavorable fire conditions.

Although this office has not kept any definite record of the amount of money saved by rearranging our forces, I know that it is no small item.

Just recently you gladly assisted the writer in an endeavor to correlate weather conditions with fires that occurred last spring. This study took two afternoons of your time and definitely established that fires burn in the Choctawhatchee regardless of wind direction and that it is possible to have a big fire with a southeast wind as well as a northwest wind.

You may rest assured that we value your assistance most highly, and personally I would not be without it for anything.

Very sincerely yours,

(Signed) SAM R. BROADBENT
Forest Supervisor

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
> Theodore Roosevelt

Vol. XIV No. 48 Washington, D. C. December 1, 1930.

"EVERGREENS TURN DECIDUOUS!

By E. S. Keithley, Pike

Foresters who would determine past drought periods by the width of growth rings in trees may find it difficult to distinguish between summer drought and winter killing injury if recent observations on the Pike Forest have any particular significance. Tress of Douglas fir and Engelmann spruce forty to sixty feet in height were so severely injured last winter as to cause the loss of all needles, giving the trees the appearance of having been deadened by a light crown fire. Many trees growing in groups or singly are at this time (November 1,) entirely devoid of green needles. Some trees are without needles on one side but green and bright on the other, while adjacent to them will be one which pulled through the winter with practically all it leaves and another which is stark naked. Examination indicates these trees, bleak and bald as a deciduous tree in winter, are still very much alive. Though no new growth was put on during the past summer season, the cambium is apparently bright and very much alive. Buds, too, very much alive, are set and ready for a new start when the spring and summer season of 1931 rolls around. The leaf buds which would have burst and made leaves the past season were nipped by a late spring frost. 'Evergreen trees turned deciduous!' "Never see'd anything like it afore", an old-timer told me.

The weather conditions are unquestionably responsible for this widespread damage. From the northern to the southern limits of the Forest along the Front range came requests for information and expressions of grave concern regarding this unusually severe winter injury. Roughly, all Douglas fir, Engelmann spruce, and Colorado blue spruce above the 7500 foot contour were so severely injured, either by the severe winter or late spring frost, or both, that little or no new growth was put on lateral and terminal branches. Occasionally a bud escaped injury. Such buds, bursting, made abnormal branches or shoots twice the normal length and size with needles in proportion. Buds on lateral and terminal branches that were frosted severely make up 75 per cent to 100 per cent of all the buds on all the trees except the pines, above the 7500 foot contour. Bud clusters have developed during the past season - new buds for the 1931 season - two to eight in number. Many forked trunks and branches are certain to result.

Casual weather observations may contribute something in the way of explanation as to just why the winter killing was so noticeably severe.

Water mains four and five feet below the surface froze up in Colorado Springs, Manitou, Castle Rock, and other towns adjacent to the Front range. In Manitou and Colorado Springs on many days there were low-lying frost clouds during zero and sub-zero periods which completely obscured the sun, while on the summit of Cheyenne Mountain (Elevation 9000 feet), Lake Moraine (Elevation 10,000 feet), and the summit of Pikes Peake (Elevation 14,000 feet) the sun was shining brightly. Reports from the top of Cheyenne Mountain gave temperatures 10 to 40 degrees higher than at Colorado Springs, 4,000 feet lower. Autoists coming down through Ute Pass would report warm and sunny skies at Woodland Park (Elevation 8250 feet). These reports occurred throughout the winter. They indicate great extremes in temperature and probably very sudden changes in the higher regions. Cold, calm air, seemingly, would settle over the plains adjacent to the foothills, while the warm prevailing southwest winds blowing above and over this cold air caused the formation of frost clouds. These warm winds were dry, low in humidity, and licked up every bit of moisture from the branches and needles of the trees except those which, due to shade or shelter, remained continuously frozen throughout the winter and were not influenced by these frequent warm winds. This alternate freezing and thawing with dry winds during the periods of thawing weather were too much for these sturdy old spruce and fir trees, and when spring and summer came, their entire crowns turned brown. A severe June frost nipped the buds that would have put out new needles. So, many of these trees heretofore evergreens are going into the winter as bald and free from leaves as does an elm.

This injury may yet result in death to many trees, but those which survive will record weather - perhaps the most severe winter known in Colorado. Future foresters fifty to one hundred years hence, finding the narrow rings or rings corresponding with about A.D. 1930, will likely say that was a bad summer drought rather than a severe winter. How many of the so-called drought periods as told by the trees were in reality winter injury or late spring frosts?

THE TIMBER FAMINE

By E. W. Tinker, R. 9

The woes of the lumber industry because of over-production need no restatement by me. They are written in red ink in all statements with respect to this industry and are known to all Foresters. The obvious panacea is curtailment of production, but the patient appears unable because of his condition to keep the remedy down.

From the fact that there is overproduction and a thirty-five year supply of virgin fir on the West Coast, combined with a declining per capita consumption of lumber, we draw the happy conclusion that a timber shortage is more visionary than real. Ten years ago Foresters were more certain of a timber famine than they are now.

The States in Region 9 were and perhaps are among the heaviest consumers of lumber. Industry and agriculture needed great quantities and still do. However, the market is declining and substitutes make heavy inroads.

In my travels through the agricultural regions of Illinois, Indiana, Michigan, Minnesota, and Wisconsin, a new structure of any kind other than a pee wee golf course or a filling station is a rarity indeed. There has been an apparent decline in needed cultural improvements on farms extending over a ten-year period. No doubt the immediate answer will be that agricultural depression is responsible for this. But is it? The diversified agriculture of southern Wisconsin, for instance, has been fairly prosperous and yet building is negligible.

Inquiry at four retail yards in Milwaukee a few months ago revealed the fact that number 1 common lumber S2S could be had at an average price of $61 per M., and yet the

West Coast industry is in distress. Inquiry of a retail yard man in southern Michigan revealed the fact that his freight charges were averaging around $21 per M. Farm use formerly consumed around one-third of the lumber supply.

At $61 common lumber becomes close to a luxury. A corn crib becomes a dubious investment. Lumber is the natural building material on farms. The farmer knows how to use it. There is no substitute for it until it reaches a price when substitutes plus the skilled labor required are cheaper.

Some years hence we may be hearing of the troubles of the lumber industry of Siberia because of overproduction. It's a relative matter to the public in the north central States, and the only logical conclusion that appears possible is that cost of transportation makes the supply of this necessary commodity a regional problem rather than a national one.

BEAUTIFUL UNBURNED FORESTS

Gilbert D. Leach in Leesburg (Florida) Commercial.

Some of the "old-timers" round about nearly had me convinced by their specious arguments that probably this agitation against seasonal burning of the woods was folderol. Their stories sounded plausible and, as I had never burned any woods and had never seen any Florida woods that had been taken care of for a period of years, my knowledge of the subject was purely academic.

Last Friday I traversed the Ocala National Forest for the first time and saw for myself just what difference there is between woods that receive careful attention, are given complete fire protection, and the general run of woods that we see along the roads through Florida.

Never again can anybody tell me that it is good for the growth to burn the woods every season; never again can anybody get away with the statement that the young trees are not killed by the flames.

For there in the Ocala National Forest is the evidence. Mile after mile of wonderfully green young growth, so dense on the sandy hills that it looks like a rabbit would have to use four wheel brakes if he tried to navigate any of the runs along the ground.

Why, here and there a pit from which clay was taken to build the foundation for roads shows how dense is the new growth, for the roots mat right to the overhanging edge of these pits and hold up some of the soil, making a minature hanging garden away out there miles from anywhere, miles from anybody except a lone watcher on a fire tower somewhere within telescope view.

Reforestation has now ceased to be merely a word to me. Henceforth it means a sea of rich, velvety green covering waste acres by the thousands - just as far as the eye can see. Reforestation is a living issue for Florida. It is more than that - it is one avenue of salvation for our cut-over lands that are falling back into State control by the hundreds of thousands of acres because of taxes. I can understand the Michigan and Wisconsin reforestation cooperative plans now, for this visual evidence of the quick and lavish crop of trees on land that is not apparently overly supplied with fertility is most convincing proof of the ready value that can be created.

So when my "old-timer" friends come to me now with their staunch advocacy of the seasonal burnings of the woods hereabouts, I mean to insist upon their going through the Ocala National Forest and seeing what fire prevention means. Then, if they are of the same mind as before and can logically confound me, I will listen, weigh, and probably make them admit they, too, have learned a lesson in woodscraft. - From R-7 Bulletin.

WHAT DO YOU THINK?

Kinda thought you fellers might like to read a little thing by Bruce Barton. He calls it "Spotlight" and goes like this:

"I went to see Frank Craven's play, 'That's Gratitude.' After the show Mrs. Craven and Grantland Rice took me up to Frank's apartment. Other friends dropped in, and presently Frank himself arrived - genuine, whimsical, modest, totally unspoiled.

"He is the author of the play, and his name is printed on the program and written in front of the theater in electric lights.

"Yet it is a play without a star.

"At least five other characters are just as important as he is. He is on the stage no more than they are, and they are given just as many good lines.

"He might have written the piece so as to monopolize the spotlight, and it might have been a success or it might have been a flop. But being the sort of chap he is, he is content to be in the background a good share of the time.

"Years ago Cameron McKenzie wrote a short story entitled 'The Man Who Was It.' The story told about a business that had been making good profits for many years. The president took life very easy. He played golf, traveled in Europe, and let the boys assume responsibility.

"After his death a young and very efficient executive was brought in, who decided that everything needed tightening up. When the purchasing agent was about to sign a big contract, the new Boss jumped into the negotiations himself. When the sales manager had a large order to close, the Boss said: 'I'll pack my bag and go with you.' When the production manager made plans for rearranging the plant, the Boss revised the plans. He worked about 20 hours a day, and was always criticizing his predecessor who had seemed to work so little.

"The result was that his associates, being robbed of both responsibility and credit, lay back and let him do it. He worked himself into a nervous breakdown, and the business went on the rocks.

"I am told that the Jesuits had this motto: 'A great deal of good can be done in the world if one is not too careful who gets the credit.'

"Wise leaders recognize this golden principle and profit by it. The foolish hog the spotlight, and frequently go to smash."

I liked it.- Jack Pine.

LET'S NOT GOOSE-STEP

By Leon C. Hurtt, Helena

After reading the article, "Attention! Right Dress!" in a recent Service Bulletin, one might suspect that Douglas Dendroctones is something of a nonconformist, and that he would not deliberately pick goose-step marching as a favorite outdoor sport. Whatever success of a lasting nature attained to date by the Forest Service, has come about to a measurable degree through the spirit of self-reliance and personal initiative, rather than by blind mass action minutely directed from behind the lines.

Douglas Dendroctones may not realize the number in the ranks that subscribe to his homespun brand of philosophy. It is a splendid thing to have occasional proof of the fact that everyone within the organization has not fallen into the tendency of taking their PR, themselves, and their jobs too seriously. And so I express gratitude for a bit of invigorating sunshine that has given genuine enjoyment.

FORESTRY IN PRINTER'S INK

By D. P. Edgerton, Washington

"The pen," it is well known, "is mightier than the sword." If quantity is the test, printer's ink might be said to be mightier than caliper or increment borer. In support of this conjecture, a visit to that vast information mill, the Government Printing Office, will prove that typesetters and proof readers handle tons of agricultural subject matter, and it is likely to appear to even the causal observer that the Forest Service is well represented in the bulletins and other material being printed for the Department of Agriculture. As a matter of fact, one-eighth of the agricultural reports, circulars, bulletins, and what not parading this highway of learning are about the forestry work of the Department.

In the half-century of its existence, and the quarter century of its maturity, the Forest Service has published 765 bulletins, circulars, leaflets, reports and others in fifteen major series of agricultural publications. The most prolific and at the same time the most exclusive series, Forest Service Bulletins and Forest Service Circulars, were discontinued in 1913. The Silvical Leaflet series, a third purely forestry class, died one year previously. Department Bulletins, Yearbook Separates, Farmer's Bulletins, Department Circulars, and Miscellaneous Circulars are grouped midstage in the pageant; Agricultural Circulars, Miscellaneous Publications, Agricultural Leaflets, and Technical Bulletins are now entering the limelight, in which, also the Farmers' Bulletin still lingers.

CHESTNUTS BECOMING MORE PLENTIFUL IN PENNSYLVANIA

The outlook for our native chestnut is more hopeful this fall than it has been any year since the chestnut blight made its appearance in Pennsylvania. This is particularly true in the eastern half of the State, which represents the region of earliest infection. After a lapse of twenty years the sprout growth of chestnut is now producing a crop of nuts.

Although for the past several years chestnut burrs have been noticed in different localities within the State, not until this fall has their occurrence become so widespread as to attract public attention. Throughout the past month the writer made field observations on chestnut replacement over a large portion of Pennsylvania and during that time he saw and heard much encouraging evidence in favor of the chestnut. Everywhere popular interest is shown over the chances for the chestnut to stage a come-back. To again observe chestnut burrs cracked open and revealing the brown nuts within, or better still to be able to gather a pocket-full of large plump nuts is indeed both a rare and pleasant autumn experience. It is the increased production of nuts which is stimulating interest in and renewing hope for the eventual recovery of the chestnut in Pennsylvania. - J. E. Aughanbaugh, in Pa. Dept. of Forests and Waters Service Letter.

POWER PROJECT IN MOUNT HOOD RECREATION AREA DENIED

The application of a Portland concern for preliminary water power permits on Lake Branch of west fork of Hood River, Eagle Creek, Wahtum and Lost Lakes was filed with the Federal Power Commisssion several years ago. The waters affected being located within a National Forest, the application was referred to the Forest Service, and after examination by the local foresters recommendations for rejection were made, which recommendations have now been approved by the Federal Power Commission.

The basis of the disapproval by the Forest Service is that Wahtum and Lost Lakes and the streams involved are within the Mount Hood recreation area, and their highest value is for public recreation. Furthermore, since there are other sources of power available, there is no real economic need for the development proposed.

A committee of national experts was appointed by former Secretary of Agriculture W. M. Jardine to examine the Mount Hood region as a big recreational development area. This committee was composed of Frederick Law Olmstead, the landscape architect; Dr. John C. Merriam, president of the Carnegie Institution; and Professor Frank A. Waugh, Landscape engineer.

After its examination of the area involved, the committee was so much impressed that it recommended that Wahtum Lake and especially Lost Lake be kept as near as possible in natural condition and that no structures nor summer homes even be permitted to be built around its shores.

YE EDITOR DISCOVERS

"High-lights of the Forester's Annual Report" will be given over the NBC network by Major Stuart on December 11 at one o'clock eastern standard time. The network includes 39 stations and extends as far west as Denver.

- - - - - - -

The Southern Forest Experiment Station has just completed arrangements with the University of Florida whereby the latter institution is making available part time of one of its members to work with the Station on a study of fire damage to the turpentine stands. Soil samples are being collected at a number of points in the naval stores regions of Georgia and Florida on both burned and unburned soils, in an endeavor to ascertain what changes have taken place and are taking place in the soil due to burning practices. Although burning has been almost universally practiced in the turpentine orchards there are still existing some places where fires have not burned through the forest for several years. The soil samples are being examined both for physical and for chemical changes which might be attributed to the burning. Where grasses abound and where their abundance is stimulated by fire, there appears to be an increase in the humus content of the soil due to the increased amount of grass roots in the surface soil down to a depth of about 8 inches. The effect of the grass roots appears to be more marked than the addition of humus to the soil through accumulation of litter. Whether or not this observation will be maintained in further studies remains to be seen. Certain it is that compactness of the soil is greatly increased by burning, and that soils which normally are friable and readily porous to water become quite hard and impermeable through burning.

- - - - - -

In response to an inquiry from the Bureau of the Budget, an estimate has been made of the additional expenditures which the Forest Service would need to make if yearlong Saturday half holidays were authorized by law. In connection with the estimate which was made, the point was urged that it is impracticable for hundreds of Service employees to take advantage of Saturday half holidays now authorized during part of the year; and that this situation should be recognized by legislative authority permitting such employees to take time off duty during slack periods of the year in lieu of Saturday afternoons, Sundays, and holidays when, because of fire danger or press of other work, it is imperative that such employees remain on duty. A bill has been introduced in Congress making such provisions with respect to Saturday half holidays.

- - - - - - -

Dr. Elwin E. Harris, for the past seven years professor of organic chemistry in the University of North Dakota at Grand Forks, has joined the Derived Products section of the Forest Products Laboratory. Dr. Harris will be engaged in the federal laboratory's investigation of lignin which has just been inaugurated on an intensive basis.

OUR BIG TREE DEPARTMENT

GAS FROM TREES

What appeared to be a phenomenon -- the presence of inflammable gas in trees -- was observed in West Virginia in the fall of 1927. Since that time the writer has seen no literature on the subject and has heard no explanation.

During growth studies of timber inNicholas and Webster Counties, West Virginia, many increment borings were taken. Occasionally it was noticed that air or gas would escape, appearing to be under pressure. Finally the thought occurred to one of the party that it might be an inflammable gas. A lighted match was applied at the handle of the increment borer, from which the gas was issuing. It ignited very readily and the flame shot out to four or five inches beyond the end of the borer, burning thus for a minute or two. The borer was then removed from the tree, and the flame continued to issue from the hole for a minute or two longer, the pressure slowly decreasing.

The incident described above occurred on a white oak (Quercus alba) about fifteen inches in diameter breast height. At other times the gas was noticed in red oak (Quercus borealis).

The nature of the gas, whether mineral or organic, and the way in which pressure was developed were not determined at the time and still remain a mystery. The trees, in all cases, appeared to be perfectly sound, no evidence of decay being seen.

It is hoped that this statement may provoke discussion and develop an explanation. - Lamar M. Wood, Michigan Land Economic Survey.

ANOTHER TOUCHDOWN FOR CALIFORNIA

With brilliant forward passes and line bucking, abetted by vociferous cheer leaders, California is running up a score fast. Her latest advance is just announced in the Foresters circular letter of September 26, 1930, which changes the name of the well-known southern Oregon and northern California tree Umbellularia californica from the time-honored "Oregon Myrtle" to "California Laurel". - T.T.M.

SOME EARLY WISCONSIN FOREST HISTORY

In order to prevent stealing of timber from the school lands of Wisconsin, the Commissioners of School and University Lands in 1860 were authorized to maintain four Forest Rangers in the northern pineries during the logging season. At the same time, the penalties for trespassing were greatly increased. However, trespassers were given an opportunity to escape prosecution if they agreed to purchase the land from which they had illicitly cut the timber, the only penalty being to add 25 per cent to the purchase price of the land.

This change, inadequate though it was and often defeated in its purpose by dishonest or incompetant Rangers, was a distinct improvement. In 1864 the law was strengthened by raising the number of rangers to 8 and increasing the penalty for trespassing to 50 per cent. On 1865 still further improvements were made, but later the number of Rangers was decreased at the behest of certain powerful interests. Thereafter the number of men employed varied in accordance with the influence of these interests.

This early leniency to the timber thieves by both the State and the Federal Governments was largely a matter of necessity. Public sympathy was all for the men who were getting the timber. The U. S. Land Commissioner in 1865 declared that "Experience has taught us that when community interests conflict with law and public opinion is in conflict with its enforcement, it becomes virtually inoperative.

The loss suffered by the State through the operations of the timber thieves was very large. In 1860 the Commissioners of School and University Lands stated: "Of all the causes that have operated to the depletion of the trust funds of the State, it is believed that none has worked greater loss than skinning the pine and other timbered lands of the northern portion of the state." The lands held by the State in trust for the St. Croix and Lake Superior Railroad and for the Sturgeon Bay Ship Canal Company which for some years received even less protection than the school and university lands were in proportion much more extensively plundered. In 1864, the State Forest Rangers found that nearly 12,000 acres of the State pine lands had been trespassed upon, and in the following year nearly 19,000 acres. In 1864 despite an inadequate force, they seized nearly 20 million feet of pine, 2,861 cords of wood, 40,000 cedar posts, besides a variety of other products. In 1873, a single "Forester" 'employed to protect the St. Croix and Superior Railroad land grant seized 11 million feet of stolen pine logs.

It was observed by the Commissioners that as soon as an active policy of repression against the trespassers was inaugurated the number of acres of forest lands sold by the State suddenly jumped upward. More particularly was it noticed that purchasers were willing to pay for lands in full instead of in installments as before. When the number of Rangers was doubled, sales increased almost 40 per cent and outright sales increased nearly 60 per cent. Purchasing thus became much more fashionable. - E. N. M.

"A NEWS ITEM"

Foresters of the Department of Agriculture yesterday announced a method which will speed up the coming of spring for the farmer and rid the surface of the ground of its late winter blankets of snow.

The method consists of distributing fine, black soil over the ground from which planting stock has been removed. Such soil absorbs considerable heat which otherwise would be reflected from the white snow, hastening the melting of the snow and permitting workers to get out the planting stock two weeks or so earlier. - Clipped

- - - - - - - -

"A simple method of cultivation, later practiced by the Swedes in America, was svedjebruk, which consisted in burning wooded plots and planting the crops in the ashes."

- - - - - - - -

"Our country was within the recollection of many now living, very heavily timbered, with a considerable sprinkling of valuable timber among it, such as Black and White Walnut, Oak, Ash, Poplar, Red Elm, and a large preponderance of Sugar and Beech, with some other straggling varieties, but the valuable timber has mostly disappeared by use for fencing and sale in log and lumber. We have plenty of firewood left, but the problem of fencing is staring many in the face." Letter of the Secretary of the Miami (Ohio) County Agricultural Society, 1878.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER.
>
> Theodore Roosevelt

Vol. XIV No. 49 Washington, D. C. December 8, 1930

1930 FIRE RECORD

By R. Y. Stuart

With the 1930 fire season practically closed, we are able to size up the record of the season. Concisely stated, it is as follows:

Number of fires

There were more forest fires within the National Forests in 1930 than in 1929 or as a 5-year average 1925-1929, but this is due to the unusual number of fires in the Eastern Regions (7 and 9). The western record shows there were less fires in the National Forests in the West in 1930 than in 1929.

Area burned over

The National Forest area burned over in 1930 is but 1/5 of the area burned over in 1929, and but 1/3 of that burned over as a 5-year average 1925-1929. In the West, however, the area burned over is but 1/11 of the 1929 record.

Damage to National Forest lands

The damage to National Forest lands in 1930 is but 1/18 of the damage done in 1929 and but 1/9 of the damage as a 5-year average 1925-1929. In the West the damage was but 1/24 of the damage in 1929.

Expenditures

The amount expended in fire suppression on National Forest fires in 1930 was but 38 per cent of the amount expended in 1929 and 78 per cent of the amount expended as a 5-year average 1925-1929. In the West the amount expended in 1930 was but 33 per cent of the amount expended in 1929.

Average size of fires

The average size of fires on the National Forests in 1930 was but 18 per cent of the average size of the 1929 fires, and but 28 per cent of the size of the 5-year average fire (1925-1929).

Average loss of gross area

The average loss of gross area in 1930 was but .107 per cent, the best record ever made by the Service.

Considering the severity of the season, these results are most gratifying. It is a record of which all of us may be proud.

WHY BE AN OSTRICH?

By R. P. A. Johnson, Forest Products Laboratory

Sticking our heads in the sand, as Forbes advocates in his "Why Borrow Trouble?" article, is not going to help either forestry or our hardwood regions. Lack of knowledge of the quality, accessibility, and amount of wood produced in tropical forests will not prevent them from competing with our native hardwoods. In fact it may even aid them, for lack of knowledge may enable importers to make exaggerated claims of superiority over our native woods, which we could not refute. The limited knowledge we have on the quality of European woods has enabled the Forest Products Laboratory to furnish data to a number of its correspondents which was possibly a valuable aid in meeting foreign competition.

Forbes' implication that the "vast forests of the tropics" is a bugaboo is an excellent example of the fallacy of his position. Possibly the forests of the tropics are not so vast or their woods so suitable to our needs as some people believe. If this is a fact and Forbes apparently believes it may be, then knowledge of the facts will enable us to effectively slay the bugaboo. If, on the other hand, the forests of the tropics are of such a character that they can seriously compete with our own hardwoods, ignorance of what they are is not going to enable us to meet that competition when it comes, as come it will. We had better face the facts and plan accordingly.

The Forest Products Laboratory is constantly receiving requests from consumers for information on foreign woods. These consumers have rights and interests which Forbes ignores. If they can buy hardwoods which meet their needs from the tropics cheaper than we can grow them, are they not entitled to that knowledge? In addition there is some information which indicates that in ten to twenty years our hardwoods are not going to be able to meet the demands of hardwood users especially auto body manufacturers. Even if we can grow hardwoods cheaper than we can buy them hardwood consumers are going to be badly in need of information on the foreign woods they may be forced to use while we are growing an adequate supply to meet their demands. We cannot refuse to make a study which may help them because the results may adversely affect owners of hardwood or because it may retard the practice of forestry in hardwood regions.

Research is a two-edged sword. It is seldom that an important discovery resulting from research does not hurt some group or industry. What may prove bad news for foresters and hardwood producers may be good news for hardwood consumers. The Forest Service cannot ignore the consumers' interests. Decision as to whether or not the Service should test tropical American woods should be based on the merits of the project compared with the need and merit of other projects. Our decision certainly should not be dictated by a fear of what knowledge of facts will do to forestry.

EARLY HISTORY OF HEART'S CONTENT, PENNSYLVANIA

By H. F. Morey. Allegheny For. Exp. Sta.

Henry Baxter, the first lumberman at Heart's Content, which happens to be the last remaining stand of Virgin white pine and hemlock in the East," kept a scrapbook of newspaper articles and notes that were of interest to him. The following account of his settlement of Heart's Content is taken from the scrapbook and was published in the Friendship (N. Y.) Reporter - Sept. 28, 1880.

"I came to Warren County, in the disastrous business year of 1837; a year which every man then engaged in business will remember while his memory lives. In that year I suffered my full share of its disaster. In that year I saw the accumulations of my earlier years vanish. Where a competence had been, nothing remained, and this among strangers in a strange land. No one can realize the anguish we felt but such as have been similarly situated. Our trouble came from an unsuspected quarter, and we were poorly prepared to meet it. The cause of the panic was to be found in the vicious system of finance, which was in use. A system in which the circulatory medium was not money - simply a promise to pay money on demand where the promisor had not the money to pay, on demand, or the means of obtaining it, therefore it was a fraudulent promise. Ever since that time I have made the subject of finance a study, and the resulting opinion is that nothing should be permitted to circulate as a medium of exchange but what is furnished by the General Government, and THAT should be lawful money for all purposes in the land. But the system by means of which the failures of 1857 were produced is the same system now advocated by both of the principal political parties that are striving to obtain the management of the General Government, while I have long most respectfully begged leave to differ with them.

"Notwithstanding the severe losses I sustained, and the difficulties I encountered in consequence upon our arrival here, we have still managed to live after a fashion, and I have been able to discharge most of the duties I owed to my fellowmen - to my country and to my family. The year 1861 was also one of disaster to me, and in 1864 the fire fiend pretty nearly drove me to despair; 1873 was another year of disaster to me. So you see that I must have enjoyed some seasons of prosperity in order to be enabled to bear up at all when the day of adversity came around in its regular way. Amid these scenes of alternate prosperity and adversity I have learned to be contented with the lot that has fallen to me - to strive to succeed in business, but not repine and grieve when the evil hour is upon us. Hence we have named our place here "Heart's Content," and of this place I now propose to give a little description- - of a home in the woods, and as a prefatory work about myself.

"I was born at a sawmill on the Caroga Creek - a confluent of the Mohawk river, in the town of Palatine, then in county of Montgomery and State of New York. My father was then a sawyer, and my earliest and constant preference as an occupation has always been that of a sawyer, which is now as strong as ever. Hence when the pine timber about Friendship became scarce it became necessary for me to abandon the occupation of my choice, or go where there was more pine. I went to Clarksville in 1854 where the business was such that the returns were slow, owing to the fact that the canal was not completed, but the profits were reasonably good. In 1857, I came to Warren Co., Pa. As soon as we could open a road that it was possible to travel to the place where we were to make boards, we built a shanty and moved in. Wolves, panthers and bears were then frequently seen about the opening, we made in the pine forest. We had been in our shanty but a little while when the trouble came. In August and September we supposed we were able to build a good steam sawmill and such houses and stables as were necessary to men and teams to work it. In October we found it necessary to hunt up every little coin that had been laid aside as a curiosity or momento, and dispose of them to obtain the bread to keep the wolf from the door of our cold shanty. By the strength of my assurances that I was a sawyer I was able to obtain employment of a man who been unfortunate in business - had no money, but many very warm friends. He found to his cost that their friendship was largely measured by his ability to make payment. He managed to get away with what lumber I had made for him the next spring, but he did not come back very soon - he sort of run away like. We finally managed to get our mill built and all the pine and hemlock timber near it sawed up, and then in 1866 we came here (Heart's Content).

(To be continued in Dec. 15-22 number)

MORE GRIEF

By L. F. Kneipp, Washington

Under recent judicial and departmental decisions, the Southern Pacific Railway Company apparently has established the right to select 60,212 acres of National Forest land within the Cleveland and San Bernardino National Forests in satisfaction of deficiencies in its land grant. Lou Barrett's state of mind, therefore, can be appreciated by anybody who knows the loving care and patient effort with which he has been endeavoring to consolidate the National Forests in R-5.

At the time of the original land grant to the Southern Pacific, the lands now involved were possibly worth 50¢ to $1 per acre. According to Barrett's calculations their present value is approximately $1,467,000. They now support one standard lookout, one long established ranger station, one improved public campground, and 76 special use resorts and summer homes, to say nothing of motor-ways, fire lines, telephone lines, etc., representing an investment of over $50,000.

The possibility that these lands will pass to private control is creating actual consternation, and persons outside the Service are advocating a cession of its rights of selection as a measure of good will and public interest.

ON THE OTHER SIDE OF THE WORLD.

"The 1930-31 logging season is about to commence. Every forest owner who has timber to cut is asking himself: 'What is going to happen? Will the already demoralized timber prices sink still further? Will it be possible to restrict production?' . . . We know that we shall barely be able to cover operating costs and taxes. Something must be done to get better prices for timber, and there is no question that forest owners must take some action. . . . If they want to have any influence on timber prices, this can come about only through adjusting output to demand and maintaining minimum prices. Such measures can be effective only if all owners act together. . . . The near future will show whether all classes of owners are ready for intensive cooperation. . . . If they would show as much interest in problems of timber exploitation as in silviculture (!), much would be gained. . . . Unfortunately it must be admitted that only the exceptional owners in recent years have been actively in favor of measures that would insure a profit; the majority to be sure were not against such measures, but they were not ready for active and effective cooperation. The same may be said with respect to forest taxation, which is so supremely important for private forestry. Such a difficult problem as the restriction of timber cut to the demand for timber and the establishment of standard prices can be accomplished only through a single central agency. Neither public nor private owners can carry out the necessary measures independently. The effectiveness of measures that may be adopted for maintaining timber prices will depend upon the unselfish cooperation of all classes of owners and their adherence to the rules that may be prescribed. . . . An unjustified restriction of the supply or a too high price level would neither be possible under present economic conditions, nor would it be advantageous to timber owners."

"Since last spring lumber prices have fallen from month to month, and the sawmill owners are in doubt whether to buy logs and as to what prices they can pay. . . . To help the situation it will be necessary either to increase the demand or curtail the supply. Increasing the demand should be a primary task of all forestry organizations . . . and the State Forest Services. Much can be done along this line, such as use of all the lumber that is possible in public buildings, . . . use of wooden instead of iron railroad ties, wooden fences instead of iron, etc. But all this will not bring immediate results . . . more effective and much easier is curtailment of the supply. . . Every forest manager, whether State, communal, or private, should adhere strictly to the policy, during the coming winter, of not cutting timber even in a thinning, unless it is sold before cutting." (From Deutsche Forstzeitung, Oct. 31, 1930.)

NEW TEXTBOOK ON SOUTHERN FORESTS

While State Supervisor of Forestry Education in Mississippi, Mrs. D. Priscilla Edgerton, now in the Forest Service Branch of PR, prepared for use in the schools of the South a textbook on "First Steps in Southern Forest Study" which has recently been published by Rand-McNally & Co., New York. This book, among the first of its kind, is being introduced into the public schools of Mississippi. Although adapted primarily to forestry conditions in the South, the book goes a long way into the subject of what forests are and what they mean to people. An introduction by Forester R. Y. Stuart outlines the contribution of forests to the economic and social progress of the South.

There is a paragraph on the different forest regions of the country; one on the migratory character of the lumber industry in the past, and several pages on the importance of southern forests. The main body of the book is cast in the form of four lessons, one each on the individual tree, the forest as a tree community, the products and influences of the forest, and the forests of the world and their conservation. The concluding chapter deals with observances like Arbor Day, school collections for forestry study, and field work.

Two pedagogical devices are used with special effectiveness. One is the lesson problem, which is used both to stimulate the pupil's interest and to suggest new thought on the material presented in the text. The other is the appeal to the eye. The 130 figures with their accompanying legends are in themselves an introduction to forestry study.

Mrs. Edgerton's work in Mississippi enabled her to bring first-hand knowledge and experience to the subject, and her book provides adequate and authentic study material, presented in such form as to fit in harmoniously with school curricula of the present day. It has in addition a lot of ingenious suggestions for use both in and out of the classroom.

YE EDITOR DISCOVERS

The Federal Power Commission on November 25 granted final 50-year water power licenses to the two concerns that plan to establish large newsprint mills on the Tongass National Forest. One of these is the Cameron-Chandler group, composed of the publishers of the San Francisco Chronicle and the Los Angeles Times, who plan to follow the lead of the Chicago Tribune, New York Times, and some other prominent newspapers in providing their own supply of newsprint. I. & J. D. Zellerbach of San Francisco were granted the other license. They are officials of the Crown Zellerbach Corporation, a large paper manufacturing company on the West Coast.

For the past three years these interested parties have been making timber investigations and engineering studies for their prospective enterprises under preliminary power permits and conditional awards of the timber supply. Now that the power licenses have been issued, the remaining steps to be taken in the preconstruction negotiations between the operators and the Government are the execution by the former of the power licenses and timber sale contracts and the approval of these instruments by the Power Commission and the Forest Service.

The conditions and obligations of the licenses and sale agreements have been closely coordinated to preclude any confusion in the administration of these complementary Government resources. The licenses provide that construction shall start by October 1, 1931, and the initial power plant, sufficient to operate the initial paper mill capacity of not less than 200 tons required by the timber contract, shall be in operation by April 1, 1935. All of the power under license shall be developed by 1942, the date by which the paper mill capacity must be raised to not less than 400 tons.

The amount of power developed in each case is approximately 50,000 horsepower. The Cameron-Chandler project is located near Juneau and the Zellerbach project near Ketchikan.

- - - - - - -

On a day-before-Thanksgiving visit to the office, Colonel Greeley stated that the members of the Commission on the Conservation and Administration of the Public Domain were still actively engaged in the consideration and discussion of the problems with which they are confronted. However, they adjourned and left for their respective homes that same day with intent to meet again in January.

- - - - - - -

On November 24 a meeting was held of representatives of the Chief Coordinator's office, the Coast Guard, Bureau of Public Roads, and the Forest Service looking to the early construction of buildings on the 15 acres donated to the Government by the city of Alameda, California. The present use of this tract for storage of road machinery by the Forest Service will continue. It is also planned to move the Supply Depot to this point, and it may develop that extensive central purchase activities will be carried on by the Supply Depot for Region 5 and outside Federal agencies.

- - - - - - -

An editorial in The National Farm Journal for December says: "With regret rather than elation, we have to record that our misgivings as to the manufacture of paper from cornstalks were only too well-founded. Our folks may recall the circumstance. A pulp mill was built in Illinois, cornstalks collected, pulp made and sold, wide publicity secured, special newspaper editions printed on cornstalk paper, a capable and well-backed corporation did what could be done to establish a sound business. Eighteen months ago we mildly inquired, Can this be done at a profit? Is the thing commercially possible?—and were soundly jumped on by an Illinois contemporary for even asking such a question. Alas, the answer appears to be No. The pulp could be produced, but not sold. Last May receivers were appointed, and the other day, we are told, they decided to close up. We say again, we are sorry. We were right, where we would rather have been wrong. After all, this latest failure in this field proves nothing, except that enough trees for paper-making are still to be found. And as long as trees remain to be cut, pulp from other sources will have hard sledding. That must end some day. The Illinois cornstalk mill may have been only a few years ahead of its time. We will not believe that the energetic work of Professor Sweeney of Ames, for example, is a total failure."

- - - - - - -

Almost 400 trees and a large quantity of plants and shrubbery have been ordered by the

Office of Public Buildings and Public Parks to be planted in various sections of the District of Columbia, it was announced recently by Capt. E. N. Chisholm, Assistant Director of Public Buildings and Public Parks. Included in the order are 200 Japanese cherry trees, which will be planted in East Potomac Park, along the banks of the Potomac River and the Georgetown Canal. A number of weeping willow trees also will be planted in East Potomac Park.

- - - - - - -

Ye Ed. received a number of items for the Service Bulletin, each with J. D. Guthrie's initials on it but each containing a typed note in the corner to the effect that the material was from R-3. Guthrie was last heard from in R-6, which as we understand it is somewhere on the Pacific Coast.

WOOD OR METAL

The recent purchase for the Federal Trade Commission of approximately $30,000 worth of office furniture a great part of which included wooden file cases, is considered highly complimentary to the wooden case. It is considered a recognition of the superior protection wooden cases afforded records and files in the destructive fire that swept the Commission's offices on September 30.

The natural qualities of wood as an insulator once more justify the statement frequently made that in case of a severe fire the chief requisite of wood filing cases is protection of their contents. It was found, after the Trade Commission fire, that the metal cases, although not melted had become so hot as to bake the papers they contained to a crisp. It is significant that in the recent furniture replacements for the Commission all of the current file cases are of wood, only a small number of metal transfer cases being included in the order.

In some parts of the building filing cases of both organic and inorganic material were badly burnt and warped. In other sections no damage at all was done to them. But in those sections where there was sufficient temperature to create a real hazard, without complete destruction, it was found that the wood cases served as insulators with resultant protection to contents, while the metal cases, like a needle held between the fingers, to the other end of which a match is held, brought the heat into their contents and damaged the papers beyond all possibility of further use. - The National Lumber Bulletin. Clipped from R-4 Bulletin

REST AN EFFICIENCY AID

Some interesting facts concerning the need for sufficient rest as a protection of the health of women workers, while at the same time increasing their efficiency. have been developed by the Women's Bureau of the Department of Labor.

In making known its information, the Bureau points out that in the present striving after high-powered efficiency, industrial engineers are giving considerable attention to the study of the human factor in the equation of production. And, as a concrete example of the necessity for the human system to have the opportunity of recuperating its store of energy, it is stated that when one's middle finger is made to lift a weight over and over until it completely gives out, a rest of two hours is necessary for its full recovery. In contrast to this fact, it is stated that when the finger is worked only half as long, it requires for recuperation not a half but just a quarter of the time of the first test.

Consequently, it is plain that rest is not only a humanitarian endeavor in employment but a very definite economy as well. The human factor never can be overlooked in personnel administration. Ignoring it is not only inhuman but can have only one result, that of reducing efficiency and cutting output.

"Individuals vary in their susceptibility to work and their need to rest," says the Women's Bureau statement, "but in dealing with a group and mass production the best guide is the old principle of 'the greatest good for the greatest number' linked with the modern policy of the most efficient plant operation and production.

"Workers who are allowed no rest are likely when fatigued to slow up on the job or to take spontaneous rests. Steady work for short periods with definite rests is found productive of higher output than is less intensive application without such breaks."

The comparison to machinery may be made in that it must be oiled constantly to maintain its efficient operation. Rest is the oil for the human machinery. Without it there can be only a break-down that is far worse than the halting of machinery. There is not only loss of output for the employer, but untold misery and suffering for the employee.

EROSION STUDIES MADE IN MISSISSIPPI

The studies thus far have shown that among the factors hastening the rate of erosion of good top soil and ruining thousands of acres of good land in Mississippi are the following: Overgrazing, repeated grass and brush fires, use of improper methods of cultivation, absentee ownership, one-crop farming, present system of taxation on standing timber, and improper road drainage.

When soil wash first manifests itself, it takes the form of sheet erosion, through which the whole surface loses a portion of its fertile top soil. If nothing is done to control sheet erosion, it soon develops into the second stage, or shoe-string gully type. The gullies start as small washes down the slope and at first are only a few inches deep. At this stage, remedial measures such as the building of terraces, sodding the slopes to Bermuda grass, or the building of small brush dams can be easily applied. If no measures are taken to stop the waste, it is not long before gullies merge; the increased volume of water increases eroding power and deep ravines and chasms may be formed. In Jefferson County, Mississippi, an area with a 15 per cent slope was cleared and planted to cotton in 1910. By 1920, it had to be thrown out of cultivation because of erosion and the formation of gullies. By March, 1930, some of the gullies were 10 to 12 feet deep and 15 per cent of the surface area of this once-fertile field had been cut up and washed away.

In Lafayette County, Mississippi, a ravine 20 to 30 feet deep has been eating its way into a fertile field for the past 7 years at a rate of about 30 feet per year. The silt loam forming the top soil in this field has been washed away and with it have gone thousands of tons of sand and clay. Two million tons of soil have been washed out of one large ravine in Marshall County, Mississippi, where erosion has cut a gash 2,000 feet long, 300 to 400 feet wide and 100 feet deep, in a gently-sloping hillside. The drainage from an old road caused this ravine to start, and nothing is being done to stop its advance. Other examples could be cited. Our studies show that over 30 per cent of the land areas of three counties in north Mississippi has been ruined by erosion.

Where erosion is most active, land abandonment is a very serious problem. The preliminary returns of the 1930 census indicate a decrease in the population in the 3 most seriously eroded counties in Mississippi during the past 10 years. This means that land values have decreased, farms have been abandoned, and the taxable values reduced. From Annual Report of Southern For. Exp. Sta.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XIV, No. 50-51 Washington, D. C. December 15-22, 1930

Holiday Greetings

With the passing of another milestone in Forest Service history added evidence has been given of the loyalty and effectiveness of our personnel in public service and steady progress toward the objectives in forest conservation.

To all of you and your families is extended appreciation of your efforts, and hearty good wishes for a joyous Christmas and a happy New Year.

I voice also, personally and on your behalf, a cordial wish that the Christmas spirit and joys may come to all our countrymen in full measure especially to those to whom present times have brought distress.

R Y Stuart.

Vol. XIV, Nos. 50 - 51 Washington, D. C. December 15 - 22, 1930

WILL WE STILL BELIEVE IN SANTA CLAUS?

By L. F. Kneipp, Washington

Over on B street southwest, back of the palatial new Department of Agriculture Building, old buildings are being demolished, steam shovels are scooping out deep excavations and monumental concrete foundations are being set for the building which is soon to shelter the Forest Service. Space allocations already have been made and a month ago the various Branches worked out the magnificent suites which they are to grace. According to present plans the building will not be ready for occupancy before 1932, but under the pressure of present economic conditions other great buildings have been completed considerably in advance of the programmed dates, and it is far from inconceivable that this coming Christmas will be the last the Forest Service will ever spend in the old Atlantic Building.

In its modern efficiency and convenience, the new building probably will compare with one of the most modern types of apartment house and one might wonder why anybody should have a pang of regret at the thought of moving into new quarters which in every detail afford the best that modern architectural skill can devise. But with all its faults and hazards and imperfections the old Atlantic Building is comparable to an old and much beloved home and the memories of other Christmases that cling around it will be surrendered regretfully by those who shared them.

When Uncle Harry Tower of beloved memory first inaugurated the Christmas celebrations, he may or may not have visioned the fact that it was through such celebrations rather than in any other way that the family spirit of the Service most clearly manifested itself. Uncle Harry's love was perhaps strongest for little children, but in large degree his office associates were hardly more than children half grown, young, smooth-cheeked, confident of the future, imbued with a faith in the cause of forestry that transcended all other considerations, willing to give to the utmost of their abilities to advance that cause. Of real children there were relatively few and they of tender years, for the men and women of the Service were in their youth and the children were of the future.

Then, year after year, the picture changed little by little. At each succeeding celebration new names were called and new babies toddled toward the Christmas tree to make their first acquaintance with the living embodiment of Santa Claus. And then older names ceased to be called, for these children had passed the twelve year dead-line and no longer were eligible to receive the special recognition of Santa Claus. And year by year the once juvenile members of the Service took on the maturity and gravity of time and increasing responsibility. And so, each Christmas, the Service has passed in collective review and the family spirit has been maintained among the old and familiar scenes.

But the Christmas celebration is only a single phase of the changes which will be effected by the movement to a new home. The Service will be leaving a building where more than in all other places combined the forest policies and history of the United States have had birth. One can recall, for example, Room 706, with the offices of the Forester and Associate Forester flanking it on either side. Here, at one time or another, have gathered almost all the men or women who have left their imprint on forestry in the United States. It was here that Gifford Pinchot bade farewell to his associates on that fateful day in January 1910 when he ceased to be Forester; an occasion so solemn that hard-boiled old Gene Bruce sat with the tears trickling down his cheeks and others less visibly shared his sorrow. It was here, too, that Graves and Greeley both assumed and relinquished the leadership of the Service. And in between, in less tragic moments, in an unbroken series of Service meetings and special conferences, what were later to be the forest policies and programs of the Nation were formulated and debated.

But--the spirit of youth is of the mind rather than the body; the need of the Nation for the creative thought and skilled accomplishment of the men and women of the Forest Service is as great as ever; the opportunity for worthwhile service is undiminished; the young and smooth-cheeked optimists who come in to fill the gaps in the ranks have the same spirit of service and confidence that characterized their predecessors; and the conception of the Service as a great family continues unabated. The marble halls in which we now dream of dwelling can not and should not effect any change in the spirit of the Service, nor diminish in the slightest degree our belief in Santa Claus for that is not influenced by the structure in which we work but rather by personal and organizational ideals and opportunities for constructive service and in the new building these can flourish and expand even beyond our earlier hopes and concepts.

FROM SANTA CLAUS LAND

By B. F. Heintzleman, R. 8

A few days ago I sat in a court in the District of Columbia listening to attorneys arguing an Alaska land case in which the Forest Service was a party at interest. An island with an unusual and somewhat difficult name figured very prominently in this suit, and one of the attorneys said, "If it is agreeable to the court and the other side we will spare the court any attempts at the pronunciation of this name and simply refer to it as 'the island'". It *was* a difficult name, but to one who had become interested in the sources of geographic names in that region and who knew of its significance such a passing over seemed almost a sacrilege. The name of the Spanish viceroy of Mexico in the early 1700's was not placed on a far away island in Alaska without some good and interesting reason. This leads up to the challenge that if any field man in the Service feels he has exhausted the source of thrills in his particular region, let him make a serious attempt to suggest a really appropriate new name for one of the many Trout Creeks, Buck Mountains or Bear Valleys of which we are all East and West, surfeited. I predict he will be soon sitting up nights poring over an amazing field of historical research he has opened up for himself. He will soon be seeking out the significance of the uncommon names that have been applied to natural objects in his locality and forever afterwards the mention of those objects will take on an added meaning and produce a glow of pleasant association; while if he succeeds in finding a highly significant name based on some interesting and historical personage or event and gets it officially adopted by the Board of Geographic Names in place of one of the common-place names that now encumber our maps, he will be a name-hunter forever afterward.

My own interest in searching out the significance of geographic names dates from about six years ago when I made a trip by Forest Service launch to a little-visited spot on the Coast of the Gulf of Alaska and on the Tongass Forest called Lituya Bay where I viewed a small gem-like island labelled on the navigating chart as Cenotaph Island. Why in the world would an island of the size of a good building lot and in this out-of-the-way spot which has never had any settlement and is not visited on the average of once a year by any human being be labelled with the unusual and high-faluting name of "Cenotaph." I went to the Historical Library of Alaska in Juneau and found an old book printed in 1794 and, of course, yellow with age and much dilapidated which was the journal of La Perouse, French Explorer, and found the following to explain Cenotaph Island.

Along about 1785 the French Government became very jealous of the honor and prestige accruing to Great Britain because of the exploits of her intrepid explorers and envied Britain the land these explorers were finding and claiming for their country. She commissioned La Perouse, Commander in the French Navy, to make a three year voyage of discovery entirely around the world, with two sailing ships to be christened the Astrolabe and the Boussole (the sextant and the compass.) Along the west shore of the Americas, in water now called the Gulf of Alaska, and in the month of June 1786, the commander discovered a land-locked bay protected from the sea by two narrow low-lying peninsulas clothed in grass and the white blossoms of millions of wild strawberry plants; the peninsulas so nearly meeting that it was difficult to determine from the ships the actual entrance to the bay. He sent two men ashore in a small boat to reconnoiter the entrance. They found the channel to be about 100 yards wide and 100 yards long but with deep water and they signalled the ships to come ahead. Unfortunately, they had arrived at slack tide when the entrance was as placid as a mill pond but by the time the ships were one mile away the 20-foot tide of this region rushing in through the narrow entrance had made a maelstrom of the short narrow channel. The pull on the vessels was so great even at a distance of one mile that it was impossible to sail out of the current. With no more steerage control than if they had been logs on a swift river in flood stage, both vessels were swept through unharmed but the journal says, "In my thirty years of navigation I never saw two ships so near destruction." Once inside, the commander, like everyone since who has seen this bay, went into ecstasies over its beauty. He called it "The most marvelous place in the world." The bay is two by six miles in dimension, the water extremely deep, of a bright green color and as smooth as a sheet of glass. A rugged mountain range around the head of the bay has five or six ice covered peaks reaching elevations of from 10,000 to 12,000 feet and culminating in what is now known as Mount Fair Weather 15,300 feet. The lower slopes carry a dense cover of dark green hemlock and spruce contrasting pleasingly with white snow fields and blue ice caps above. Two great glaciers wind down the principal valleys and discharge into the head of the bay. Cenotaph Island three hundred feet high, and swarming with millions of nesting sea birds, stands directly in the center of the bay and its summit commands a magnificent view of the Pacific, the ocean gateway and the surrounding peaks, glaciers, forested slopes, and green waters.

Once inside this wonderful bay with the terrifying gate La Perouse was afraid to leave. He noticed that the rollers broke entirely across the entrance; that the period of high and low water slack in the tidal current lasted only about 20 minutes. He waited six weeks for the summer tides, and improved his time by having his geographers and sailors make a survey of the bay, and his chart is the one still in use. Needless to say, he charted the entrance he was always thinking of. He warned the geographer in charge not to approach that maelstrom with the small boats. However, the officer happened to be a young French nobleman, lieutenant in the Navy, who did not take kindly to instructions. He blithely sailed and rowed his three small boats down the bay; the farther the boats proceeded the easier the rowing. When the roar of the entrance ahead became audible above the singing, it was too late to ease over to the near shore and to continue the trip on foot. With 8 to 10 men rowing desperately in each boat it was impossible to make any headway and the three craft shot into the entrance with its whirlpools and combers. Two boats with the lieutenant and 21 men were upended and sucked under by a whirlpool almost instantly. The third in charge of an experienced non-commissioned officer had whirled end about at the start of the mad race and the officer wisely and with great effort held it so, and safely passed through the entrance and for two miles to sea with the outgoing tide.

Not a trace of the 21 men and their equipment or the two boats could be discovered by La Perouse. He erected a wooden cross on the bay's prominent little island. At the foot of this cross he says he buried a bottle containing an account of the catastrophe and a brass disc on which he had etched the names of his vessels and the date of his visit. He christened the island "Cenotaph." The cross, of course, is long since gone but this surely would seem a good place for any enthusiastic relic hunter to start digging. La Perouse left the bay after the tragedy and proceeded north on the American Coast and then down along the Coast of Asia. After entering the Indian Ocean neither of his ships nor any of his men were ever heard of again. His journal had been given to a captain of another vessel he had met in one of the Pacific ports of Asia for dispatch to France and it thus escaped the fate of himself and party.

For me this is an intensely interesting story to uncover in trying to run down the significance of a place name. Moreover this and other interesting facts I have found out in in connection with research work on such names that formerly meant little to me have led to some serious thought to the matter of selecting suitable names for places not previously designated. One who starts looking into this question of the significance and appropriateness of names of places is bound to discover a lot of fascinating local history. He will attain a new interest in many places already suitably named and will get much enjoyment in seeking for satisfactory names for places now not designated at all or having no distinctive name. It is certain that as a result of this interest our maps will begin to show fewer Duck Creeks, Pine Flats, and Deer Mountains.

TREES

By Peter Keplinger, Washington

Christmas is not Christmas without a product of the forest. And what better, more fitting emblem could Christmas have than the tree. It is for some reason and in some manner closely associated with fundamental human emotions which are entwined about those deeper feelings and experiences for which Christmas stands.

Somewhere I have read that it is the forester's job to grow trees. But does his job end there? The producer of shoes does not consider that his job is finished until the shoes are on somebody's feet. Why do foresters consider that they are through until the tree is used, and what higher use is there than that associated with Christmas?

I wish we as foresters could take this responsibility more seriously, and that our public relations experts, our advertising experts, and our sales experts would get together and start a campaign that would put a Christmas tree in every home, every year for all time to come. Would that not add more to human happiness than just growing trees?

THE VALUE OF BEAVER ON THE NATIONAL FORESTS

By Marvin Klemme, Medicine Bow

At this time of the year when the trappers are beginning to place out their traps, there is one little animal which I believe each Forest officer should make a special effort to protect. That little animal is the beaver. If all of the smaller mountain streams which furnish water for the arid and semi-arid lands of the Rocky Mountain region were fully stocked with beaver we would not experience the shortage of water which occurs during the late summer and fall months.

The series of dams which these little animals build collect and hold volumes of water, and instead of coming down in torrents in the form of spring floods, bringing with it tons of sediment, the water trickles down slowly during the dry months of the summer when it is most needed. An old cattleman once remarked to me "You see that whole drainage up through thar? Well, in the early days when all those tributaries were well supplied with beaver dams, there used to be enough water to irrigate this whole valley. Now when September comes there's not enough water for the stock." I believe this statement to be more or less true for the whole Rocky Mountain region.

Beaver are not only conservers of water but are conservers of soil as well. The many little "shoestring" valleys, or meadows, which one sees in the high country were mostly created through the efforts of the beaver during past centuries, instead of being of glacial origin as many people seem to believe.

From the recreational standpoint, the beaver is both interesting and useful. They are strictly vegetarian and will not molest animal life in any way. They also furnish homes for fish and some of the smaller fur-bearing animals. By this time, some of you are probably saying "Yes, and the little 'pests' chop your apple trees down, dam up your irrigation canals, fill up your culverts, and a lot of other things." This is all quite true, but they should, and can, be kept out of such places and confined to areas where their services are needed.

These animals increase quite rapidly, and if fully protected they would soon be found on every stream with sufficient food and water to serve their needs. Once they increase in numbers to exceed the food supply, they should be trapped. If this was properly handled they could be made to furnish quite a source of revenue to either the Forest Service or the State. A prime beaver pelt will bring, during a normal year, around $20. At this rate, we can see that it wouldn't take many such pelts to bring in more money than some of our smaller timber sales. And all this in addition to their value as water and soil conservers. - Clipped from R-2 Bulletin

EARLY HISTORY OF HEART'S CONTENT, PENNSYLVANIA

By H. F. Morey, Allegheny For. Exp. Sta.
(Cont'd. from December 8 number)

"It is not easy to take in the situation of a family consisting of husband and wife with three small children, starting out from a comfortable place where the woods had been made good, and the forest driven back; say on the 21st day of November 1866, amid frequent squalls of snow accompanied by a wind so severe that they were almost blown from their seats in the wagon, a long dreary day drive before them, and most of the way over roads such as have not been seen in Friendship since my earliest recollection. But we moved on. By the middle of the afternoon we leave the road upon which were occasionally seen a lone habitation of very primitive construction, and we follow one which has just been opened through the woods, the brush and logs cut out just enough to allow us to pass, and through this lonely wilderness road we wend our way to the end. Six miles without a habitation, and here we come to a log house that has but just been rolled up, but in which no doors have been hung, no glass windows, but it is the place where we are probably likely to spend the remaining number of our years, for here is the unbroken forest of fine timber which has extended for more than ten miles of the last part of the distance we have come, and which extends miles beyond this termination of our road and journey, we do not know how many. Here seems to be a life business for the sawyer. But here is also the place which will try the strength of the weak ones. Many men came here, who, under slight difficulties abandoned the place and returned to the more settled portions of the country. Such people gave the place a bad name as a place to make a home. Our log cabin was new and soon made comfortable, so far as protection from the cold and inclement weather was concerned. The tall pine and hemlock trees had been cut away far enough so that none would fall on the house in case they were blown down by the wind. As a surveyor it took time to become familiar with all the hills and valleys here about. But I must close this part of my story. In due time another sawmill was started up and the sawyer was happy. Here was sawing enough. A good plank road was made to the river about seven miles. About one mile from the mill it was continually uphill and all the way at a rise of eight inches in the distance of a rod, we had some low-wheeled wagons made to use in running the lumber out of the mill. Of an evening in the summer after the close of the work of the day, men, women and children would go a mile up this road with these wagons, then a skillful navigator would take on the buckboard at the forward end of the wagon, and men women and children enough to fill up the boards would take seats behind him. The wagon would then begin to move down the grade guided by the strong man seated on the forward end. As they moved forward the motion would be accelerated until it was now what would be termed 'fearful' and amid the shouts and laughter of the passengers the bottom of the hill would soon be reached. The motion was retarded by the passengers dragging their feet on the plank. Such an exercise can be appreciated only by being seen. We had various other means of amusement which any employer can well afford to furnish those about him. In this way all became contented and as happy as most mortals, and the place became 'Hearts Content'.

"After the panic of 1873 other means of employment have been found. I write this at what seems to be the close of the equinoctial storm, Sept. 30. Our fields - both pasture and meadowland are as green as they were in June at any time, for we have cleared off a portion of the old logs, tree tops, briars and bushes which always follow the operations of the lumberman. The pine trees are all gone for miles about us and we live in a house that once smelt of paint. By hard digging among the stumps we can get a fair yield of corn, potatoes, wheat, rye, oats and buckwheat. We have a great number and variety of fruit trees and vines that have already begun to bear fruit. We have as yet, had no killing frost and the grounds around our dwellings are well supplied with quite a variety of flowering and foliage plants, and we have now in full bloom the following plants: petunia, verbena, annual and perennial flox, larkspur, tritoma, cockscomb, dahlia, sweet peas, pansy, balsam, poppy, portulaca, gladiolus, marigold, mignonette, morning glory, evening primrose, calliopsis, and several other small flowers of rare beauty and fragrance, as well as ever-blooming roses.

"Our mail accommodations have not very much improved, as we now find it most convenient to get our mail matter at Warren where we do our trading."

- - - - - - - -

"What you going to give your best girl for Christmas?"
"I aint figuring on having a best girl 'long about then."

YE EDITOR DISCOVERS

Falling leaves usher in the melancholy days, but they pass and the first snows tell us Christmas is near. Ye Editor and his assistant wish to thank those who have helped by contributing during the past year and to urge them to continue to contribute. They also wish to urge others to contribute.

To Bulletin readers, Sincere Greetings of the Season, and "more power to your pencils."

HELPFUL COOPERATION

A memorandum recently received from Lou Barrett, Lands wheelhorse of the San Francisco Regional Office, may be of interest to other field officers who have spent weary hours hunting elusive section corners or lines and thus have learned to love the modest but helpful cruiser's tag--when it is correctly placed. Barrett says:

"It may interest Lands and some of the other Branches in the Washington office to know that as a result of a request on our part all of the field engineers of the local Public Survey Office are supplied with the Forest Service cruiser tags which they post wherever section lines cross roads or trails in the Forest when they are making new surveys or re-establishing old surveys.

"This cooperation on the part of the local Public Survey Office has been very valuable to the Forest Service. I believe that if this matter was taken up by other Regional offices with their local Public Survey Offices, that the Cadastral Engineers of the General Land Office would follow the same practice in their survey work in other regions.

"Perhaps some of you might have the opportunity to take this up informally with Mr. Johnson at Denver. This cooperation has proven so desirable here, and the G.L.O. surveyors have been so willing to cooperate with us in this matter, that it looks like a practice which might well be extended. In case none of you have the opportunity to take this up with Mr. Johnson, I should be glad to make it a point to do so the next time he is in San Francisco, since I have known him for nearly thirty years and worked under him before entering the Forest Service. We have had this cooperation for several years."

WELL! HERE'S ONE WAY!

By E. J. Fenby, Rainier.

A visitor traveling cross country on the east side of the Rainier Forest came upon a single burning snag which had been struck by lightning. Being without means to extinguish the fire, he reported it to the fireman. It required all the skill of the fireman, who was an expert woodsman, to find the snag because of the meager description given and the fact that no smoke was visible. The second morning the fireman found the burning snag. After extinguishing it, he was skeptical Of his ability to give its correct location in his report, as the country was unsurveyed and maps remained more or less a bugaboo to him in spite of many guard training camps. He solved the problem by establishing its previous location by intersection, building a big smudge in a safe opening closeby, a smudge large enough to be visible from lookouts, and leaving it up to some one else to give section, township, and range. Woodsmen have always been famed for their resourcefulness!

CHRISTMAS — IN 1999

By C. E. Randall, Washington

'Twas the night before Christmas, and all through the Forest Service, not a creature had been stirring, although everyone was nervous. For Santa Claus had promised that if all the boys were good, he'd remember them with presents from his pack-sack, so he would. Of a sudden came a stirring, like the patter of the rain, and Santa Claus was landing with his helicopter plane.

"Well," said jolly old Kris Kringle, with a hearty, laughing snort, "how's the forest work progressing? Let's now have this year's report."

"The forests of the Nation," said the Forest Service Chief, "are in fairly good condition, it is my sincere belief. The current year's production, so says our balance sheet, reached an estimated total of a billion billion feet. All the slash has been disposed of with our new electric raker. We increased our range capacity to three hundred head per acre. Our able Branch of Research has increased the rate of growing so that trees may now reach cutting size just three years after sowing. Our Lab has found a process whereby all our needed food and clothing and utensils can be made from surplus wood. Our watershed conditions we now regulate at will; and by causing faster tree growth, pull the floods back up the hill."

"But are all the lands producing?" old Santa broke in, panting.

"Well, three acres in Chicago are still in need of planting."

"And how about the public? Are relations up to par?"

"Well," the Chief said, "broadly speaking, it is safe to say they are. All required legislation was unanimously passed; and our latest man-caused fire was the year before the last. We met some slight dissension when we advanced the notion that all smoking be abolished unless done in mid-ocean. Our forests now are playgrounds for the entire population. Yes, I believe it can be stated we get fair cooperation."

"Very good," said Santa, chuckling, "it is easy to be seen, that you all deserve your present - a new forestry machine. If you ever need a forest, press the button on the right, and you'll find this new contraption grows one for you over night."

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XIV No. 52 Washington, D. C. December 29, 1930

G. G. A. TAKES A HOLIDAY

By Harry Irion, Washington

"Retirement", said George Washington more than 130 years before we had a Retirement Act, "is as necessary to me as it is welcome." Fortified by this high authority and pursuant to the law of the land, the latest to betake himself to retiredness is our own George Graham Anderson. It is no exaggeration to say that he is known at least by name to every member of the Service as they, too, are known to him. Having reached that golden hour for bringing to an end a happy chapter in a long stretch of usefulness, he is signing off from station USFS at the close of this year of grace, 1930.

Mr. Anderson was born December 14, 1860, at Perryville, Juniata County, Pennsylvania. During his infancy his parents moved to nearby Altoona. There he remained until 1884, when on account of his health he went to Roanoke, Virginia. Early in life he started an active career that was to extend over a period of more than fifty years. After teaching in the public schools for a short time he engaged in journalistic work in which he rose to the position of city editor of one of the Altoona newspapers. Following this employment he entered railroad work, serving in turn as stenographer, passenger rate clerk, and chief clerk. He also served as bookkeeper and office assistant with other commercial concerns before being appointed in the Forest Service on January 12, 1901.

With a lively relish he practiced a convincing precision of expression that from early days has been widely accepted as a model for official correspondence. It might be said this ruling passion was so highly developed that his written word could make it clear to you "that black is white when looked at from the proper point of view", and "that 'yes' is but another and a neater form of 'no'". Being a member of the shock troops which took over the National Forests, his life was intimately linked up with the organization and development of the Forest Service. Heavy demands were made upon those pioneers and G.G.A. more than carried his share of the burden. Endurance was then a prime requisite and this quality he possessed in abundance. In the perfecting of our administrative procedure he richly contributed, and the work he did in training stenographic and other clerical personnel and in developing our subject-matter filing system, for example, will remain a testimonial to his genius in office management

By retaining during his entire official life the perennial eagerness of youth, he came to be regarded by his associates as a reservoir of unused energy and they could not help but admire the effective and meticulous way in which he performed his duties. Seemingly he observed and mentally retained all that his eye lighted upon, and, being experienced in the ways of life, he was able to use with fine discrimination what he observed. It is scarcely necessary to say that he takes with him a long and remarkable experience in the work of the Service. Indeed it seems that something of great value is lost when one like G.G.A., on leaving, can not transfer to those who remain the rich experience he is compelled to carry away.

He is exceptionally well acquainted with much of the best that has been written, and, when occasion requires, can draw from a well-stored mind an anecdote or apt quotation that helps drive home a point. Blessed with a delightful sense of humor he can enliven any conversation in which he engages. His interests in the life about him have always been varied, and it will be to these interests that he can now give time that heretofore has not been available. With an unquenchable thirst for professional baseball, nothing gave him greater joy than to while away a warm summer afternoon at the Griffith Stadium watching the fine points of play. We are glad, although with pardonable envy, that he can now see the great national game more often.

Wherever you wander, dear G.G.A., may it ever be the right place for contentment and all that it implies. Your absence from your accustomed haunts is something that time must teach us to accept. Not being able to have you with us as heretofore, may we express the hope that you will not fail to join us on festive and other special occasions.

ONE EDITOR TO ANOTHER

Mr. I. W. W. Hutchinson:

We are going to write an article for your new publication. We have read No. I, Vol. I, of the California Ranger with much pleasure and received a particular thrill of pleasure at the fine old name Ranger with which you have christened your California publications and the splendid sketch of the old stump-herder on his horse, at graze before a vista of forests and white-topped mountains.

The contents, too, were bright, breezy and interesting as they have always been - well, most always - and as they doubtless will continue to be so long as you are editor. And so a brotherly feeling prompted us to write something for your magazine, especially since we know how difficult it is to secure material - even poor material. This brotherly feeling somehow persists in spite of the fact that we are keenly aware that your methods in getting material for your own publication have not always been strictly on the level. This is saying, after a fashion, that you have probably diverted to the uses of your own publication material that was entrusted to you for transmission to Washington for use in the Service Bulletin. Indeed if our memory serves us correctly you have confessed to doing this - in writing. However, having nursed the R-2 Bulletin from an 8 ounce anaemic child that we did not think would live, to a fairly husky youngster, and having labored hard to secure nourishment for the Service Bulletin for a number of years we are minded to be tolerant, yet we cannot help giving expression to the wish that you will somehow, sometime grow careless and allow some stuff to get by you and reach Washington.

But to revert - that name "Ranger." It intrigues us. Why should not all Regional publications be Regional Rangers? Why should not editors vow to preserve the glorious name Ranger from the attacks of wood-boring insects that would let live nothing but junior foresters. We are going to promote the idea of changing the name of the Service Bulletin to "Service Ranger" or "Ranger" and we'll change it, too, if we can get away with it.

We extend our sincere best wishes to the California Ranger and Seasonal Greetings not only for this season but for many seasons to come to you, its editor. May you last long and wear well. Selah!

Just before mailing this article to you our assistant pointed out that since it contains a suggestion for changing the name of other Service publications, thus giving it Servicewide appeal, and since folks in other Regions than California know the editor of the California Ranger (though perhaps not so well as we know him) and may wish to send him congratulations, yet may not have seen the new issue of the Ranger, and since one of the thoughts contained in said article may apply to other editors, and since we ourselves are shy of material for the Service Bulletin, this little blurb would fulfill its highest destiny by being published in the Service Bulletin rather than in a strictly local medium such as yours. We agree with our assistant and have approved the change.

It is our hope that you will receive for the Ranger as many contributions during the coming year as you can find space for, and that some of them at least will have been written with the brotherly urge and the spirit of cooperation breathed into them, as has this one. Good luck. - H. R. K.

EVENT OF THE HOUR IN CONSERVATION

Announcement was made by the Department of Commerce on December 5 of the appointment by President Hoover of a National Timber Conservation Board.

The names of the members are: Secretary of Commerce Lamont, Secretary of Agriculture Hyde, Secretary of Interior Wilbur; John W. Blodgett, Grand Rapids, Michigan; John H. Kirby, Houston, Texas; Paul G. Redington, President of the Society of American Foresters and also Chief of the Biological Survey; Charles Lathrop Pack, President of the American Tree Association; George D. Pratt, New York, President of the American Forestry Association; John C. Merriam, Washington, D. C., President of the Carnegie Institution; L. J. Taber, Columbus, Ohio, Master of the National Grange; Carl R. Gray, Omaha, Nebraska, President of the Union Pacific Railway Company; D. C. Everest, Rothschild, Wisconsin, past-president and member of the Executive Committee of the American Paper and Pulp Association; W. H. Ritter, Columbus, Ohio, and Washington, D. C.

The creation of a Timber Board, which was proposed several months ago to President Hoover by leaders in the forest conservation movement and representatives of agriculture and owners of timber and the lumber and paper and pulp industries, is the outcome of an effort to improve the economic position of the natural resources industries with respect to balance of supply and demand.

The proposed task of the National Timber Conservation Board, according to the National Lumber Manufacturers Association, is to compile the important facts of production conditions and trends in the forest industries, analyse and interpret them, and develop therefrom recommended policies and programs of public and private action, which may secure and maintain an economic balance between production and consumption of forest products, and lead to the perpetuation of the forests and the industries based on the use of timber. It is not expected that the Board will attempt to frame any broad national forestry policies, but rather that it will direct its activities to the national economic problems involving the supply and use of forest products and the maintenance of those important sources of employment and national wealth.

YE EDITOR DISCOVERS

The following increases in the regular 1932 appropriations were approved by the Budget and the House Committee: fire prevention - $42,160; commercial timber sales - $24,000; blister rust control work - $20,000; grazing administration - $10,000; special uses - $4,000; general surveys and maps - $8,000; recreation areas - $8,000; administration of new units - $20,000; lands - $6,280; sanitation and fire prevention - $10,000; planting - $25,000; timber surveys - $4,940; range reconnaissance - $5,000; protection improvements - $90,000; protection roads and trails - $150,000; range improvements - $20,000; administrative improvements - $20,000; research in forest management - $52,660; range investigations - $34,240; construction of Forest Products Laboratory - $700,000; forest survey - $74,900; forest economics - $25,000; forest fire cooperation - $74,800; cooperative distribution of forest planting stock - $2,000; forest highways - $1,500,000; soil erosion - $20,000.

Increases of $6,000 for fish and game activities and $33,700 for forest products which were approved by the Budget were not approved by the House Committee.

- - - - - - - - -

With Secretary of War Hurley acting as presiding officer for the first time, the National Forest Reservation Commission spent a strenuous two hours on December 3, not only in considering and approving 345 purchase cases within 27 of the purchase areas, involving 257,081 acres at an average price of $2.63 per acre, or a total cost of $676,520, but also in debating the policy which should be followed by the Federal Government in cases where the mineral resources in lands acquired by the Government have been reserved by the vendors or have previously passed to third parties. Both Secretary Hurley and Secretary Wilbur are strongly of the opinion that such resources will have a very high ultimate social and economic value and consequently the United States should, so far as practicable, secure title to such resources as well as to the surface of the land.

Within the heretofore approved St. Croix Unit in eastern Minnesota the bonded indebtedness plus the delinquent taxes amount to so much per acre that purchases are not feasible. The Commission therefore authorized the abandonment of the St. Croix Unit and in its stead authorized the establishment of a new 180,000 acre unit midway between the Superior and the Chippewa Forests and immediately back of Virginia, Minnesota. This unit will be known as the Mesaba. The Commission also agreed to the rechristening of the Mackimac and Keweenaw Units which will hereafter be known as the Hiawatha and Ottawa, respectively.

- - - - - - - - -

The first lesson in the organization discussion course for Supervisors and Regional office men, together with supplemental reading material, has been sent to Frank Haynie for printing. It will be mailed directly from that office to all Supervisors and others requested by the Regional Foresters. The full course will consist of eight lessons covering the following subjects: Lesson I - meaning of organization and definition of terms used in organization literature; Lesson II - types of organization and organizations charts; Lesson III - organization principles; Lesson IV and V - sample organizations; Lesson VI - decentralization; Lesson VII - trends in organization practice; and Lesson VIII - the relation of the organization to the men.

- - - - - - - - -

Region 7 has recently been granted by the Plant Quarantine and Control Administration a permit to import forest tree seeds from Europe. In case ony other branches of the Service desire to make such importation, the Plant Quarantine and Control Administration requests that the same permit be used. The permit is No. 2136 and is filed in the Regional Forester's office, Washington, D. C.

- - - - - - - - -

The semi-annual promotion recommendations, which this time total for the Service .97 of one per cent, have been forwarded to the Department.

- - - - - - -

C. M. Granger, Director of the Forest Survey, has taken up permanent headquarters in the Washington office.

OUR GENTS' FURNISHINGS DEPARTMENT

"ANENT DOUGLAS DENDROCTONES"

Dear Dendroctones:

You all evah been to Texas? Well you all nevah saw in all yoah travels a Texas rangah in uniform unless it was at the ghovernor's review. Least aways ah nevah did. But I'll tell yoah boy, uniform or not ah knows a Texas rangah when ah sees one and ah aint monkeying with em none.

Ef it took uniforms to make a Forest Rangah you all and we uns would look like a razor back shote long side of a blue ribbon Poland Chiny hawg in comparison to some of these town sheiks. You all rememba' that Clayton used the New Forest Assistant as his model of the uniformed Forest Rangah at our meetin' in 1920, or was it 21? Anyway he had to use him because his laigs fohmed a double track while we uns looked mo' like a railroads "Y".

Ah nevah had no trouble in the old days bein' recognized as a Forest Rangah. Two howahs aftah ah lit in a new town ah was classified and catalogued by every strangah ah met as the new Rangah, and from then on my main trouble was keepin mah movements and mah business to mahself. Then the people wanted to know "where at's that dammed Rangah?" Sometimes because they had business with him, and sometimes because they all preferred to keep theah business from him. Now adays they all know he can be found at least three fo'ths of the time at the station writin' repo'ts and they don't worry none about the yuther fo'th because he caint git very far away from the station without havin' to hurry back to fill out a fohm or compose a voucha.

Ah Don't feel the need of a unifohm half as much as ah does a co'se in stenography, but ef'n ah must have a unifohm ah wants it complete from shoes to hat, from breeches to ova coat. Ah wants kakis ah kin wear when ah'm workin an another uniform all nice and purty ah kin weah when ah'm bein inspected.

Yoahs fo mo' an betta ranghas,

COLORADO PETE, R - 6

OUR UNIFORM

Great excitement prevails in the Service,
much ink and much paper is wasted
In expressing the views of Foresters whose
opinions are promptly lambasted.
And this commotion arose when some careless bozes
inadvertently made the remark
That our uniform was most carelessly worn,
and had not been improved since the Ark.
So I hereby join in this infernal din
by submitting the following text
With the prophecy that my opinion will be
as worthless as the next.

The gray colored hat with the brim stiff and flat
and the crown built way down low
Is a thing of beauty which you wear while on duty,
twenty four hours a day or so,
And the sweat drops run in the torrid sun,
for its as hot as a feather bed;
When the wind blows strong it takes a leather thong
to keep it attached to your head;
It's in the way on a brushy survey,
you'd better leave it at home
For many a limb will collide with the brim
and demote it off of your dome.
Each drop of rain leaves a spotted stain----
just send it to the cleaner,
It'll look like new when he returns it to you,
and your purse will look somewhat leaner.
But we must admit there's this about it,
and the darned thing has some merit---
It distinguishes us from bell hops and such
which may be reason enough to wear it.

Now doctors advise to wear clothes of a size
that will hang loose and free,
So air can ventilate and your blood can circulate,
if healthy you would be;
But close-fitting breeches drape the rangers sylphlike shape,
bring out each handsome contour-
He looks like a mate for a fashion plate
instead of a worker and do'er;
They call them riding breeches, though you're apt to rip the stitches
if you try to ride a steed,
For they're built for aviators and those handsome navigators
who supervise the traffic's speed;
But they take the female eye, and that's the reason why
we bear discomfort and the heat.
Well, perhaps its worthwhile if they're the style
and they give the girls a treat.

The suit is a goodly color - dirt just makes it duller
and it hardly shows,
But anyone should know that too much drabness is the foe
of snappy looking clothes;
We need a spot of light, something colorful and bright
to make a pleasing contrast
And instead of this we wear a tie whose somber air
imparts a funereal cast.

So its putts or boots for those it suits,
and breeches that fit like a glove ---
Though I'll take my chance with a pair of pants
when the sun shines hot above.
Now if you don't agree on these matters with me
get out your Underwood
And tell us why you'd rather sweat and fry
than be comfortable when you could.

The Bard of the Sequoia

FIT UNIFORMS OR A UNIFORM FIT

Dear Douglas, Silviculturist:

I'll loose my muse (since you insist) and join again the ranks of those whose minds just seem to run to clothes. I weep, I wail, I groan. I sigh, because this sleeping dog won't lie, but rises oft, with wagging tail, our peaceful moments to assail.

You're mostly right, I will agree, in what our uniforms should be for men who work - not play a part - in teaching Nature her own art. I'm sure we all want clothes that tell the people who around us dwell, that we are men - proud of our birth - ready to serve with deeds of worth.

For office wear we should conform to standards which are uniform, and shirt and tie should harmonize to be more restful to the eyes; while in the field we should all wear 'most anything that will not tear, for although we must dress for show, some things the public should not know.

They should be plain, substantial, neat, no holes in elbows, knee, or seat, and forest green so all may see that we are kindred of the tree. In fit not loose but yet not tight - some day I hope to get one right - in quality and style okeh, (see list in Manual, section A.)

All right and proper, I believe; but Doug! those rank stripes on the sleeve! Some one's just kidding, don't you think, or trying hard to raise a stink? It can't be true that any man such falderals for us would plan, or anyone expect that we to such effeminacy agree.

And Doug, some things in life I've missed; don't know a silviculturist, don't know their part in this life's game, don't know what Service graft they claim. But, If you're one of our old clan I know, darn well, you are a man, and know you'll fight to keep our sleeves free of those worthless make-believes.

But that short talk about the cap, at first it made me want to scrap, for I'm a lover of John B. as any he-man ought to be. And then I laughed, I said, "I'll bet that sly old fox is smiling yet, to see how many suckers bite on that cap-bait" - now ain't I right?

Well, so-long, Doug! I'll have to quit before I throw another fit, for why don't Operation plan to buy more cheaply that we can these uniforms and shirts and ties, along with other mass supplies? Perhaps some day our maintenance chief will bring us this desired relief.

- LoCoed Silas - Holy Cross-

SOMETHING NEW

Dear Editor:

Did you know that out West they are talking about uniforms again? Looks like they are trying to keep from the public news to which it is entitled, since nothing regarding this movement has appeared in the Bulletin.

We got the following pointers on what's proper to wear in the wide open spaces out of a letter from a Regional forester to his pal. (1) uniforms should be made like all other clothes so that only those who know the Forest Service manual can detect their uniformableness. (2) Cerise is omitted from the list of permissible colors in shirts. (3) No Forest officer should decorate himself in plus fours - they may be worn by his sisters and his cousins and his aunts. (4) Suspenders should not be worn except in case of necessity, and they only on dark nights or other occasions when they can't be seen. (5) Slickers; German socks; red flannels; and chaps, wooly winged or stovepipe to be applied as needed.

Personally I'm glad to get this advance information regarding forthcoming styles, my outstanding offer to trade a pair of chrome tanned wings for a used, but serviceable, pair of plus fours with reinforcements at the points where the chaps are weak is hereby withdrawn.

I suggest that you should open your columns to a free discussion of this absorbing uniform question.

Douglas Fir.

P. S. Do you know of anyone who might be in the market for a stout pair of extra length suspenders?

- - - - - - - - -

Sporadic outbursts regarding the wearing of a uniform have been appearing in the Bulletin. Everything in the way of a garment from Regular Pants to Choke bore breeches and plus fours or stepins has been advocated and at times worn.

Most of us have bought more than one uniform, but most of us still wear something else in the woods. The long and short of the whole uniform matter is that it is not yet practical for the job. Only a few field men have jobs that enable them to dress as prettily as a Park policeman. Few of us can afford nice tailored panties for marking, scaling, creek fording and fire fighting.

Although we all wear nondescript articles of clothing, it is not entirely from choice. It is because suitable stuff is not easy to get. Just as soon as someone makes uniforms out of fabrics that will stand our working conditions, you will see men sprouting out in them.

If the Uniform Committee will talk Duxbak or Filson into making stuff our color in two weights, one medium khaki something like the real old army officers stuff, and some of the so-called shower proof stuff, require all of us to subscribe to a couple of pairs of pants, shirts, breeches, cruiser coats or whatnot and get the stuff cheap, you will see us all looking like a Bus Drivers Convention. As it is now, it isn't much worse to look like a drugstore cowboy or an old-time flat header than it is to look like a nine year old ram who missed last summer's shearing.

O P'shaw

1.9
F76S
Vol.14

DEC 5

MAR 8

Form 172

U. S. DEPARTMENT OF AGRICULTURE
LIBRARY

NOTICE TO BORROWERS

Please return all books promptly after finishing your use of them, in order that they may be available for reference by other persons who need to use them.

Please do not lend to others the books and periodicals charged to you. Return them to the Library to be charged to the persons who wish them.

The mutilation, destruction, or theft of Library property is punishable by law. (20 Stat. 171, June 15, 1878.)

Lib. 9 GPO

3—7888